

The Singapore Family Physician



ISSN 0377-5305

**The College of General
Practitioners Singapore
Vol. XVI No. 3
July/September 1990**



[®] VOLTAREN

the most frequently used NSAID
in the world¹

well over

70000000

prescriptions per year²

Presentation: Diclofenac sodium: tablets of 25 mg and 50 mg; sustained-release tablets of 100 mg; suppositories of 12.5 mg, 25 mg, and 50 mg; ampoules of 75 mg/3 ml.
Indications: Inflammatory and degenerative forms of rheumatism. Acute musculo-skeletal disorders. Acute gout. Post-traumatic and post-operative inflammation and swelling. Painful and/or inflammatory conditions in gynaecology, e.g. dysmenorrhoea. Renal and biliary colic (ampoules). As an adjuvant in severe painful inflammatory infections of the ear, nose, or throat. (Fever alone is not an indication). **Dosage:** Depending on the indication 75 - 150 mg/day (dysmenorrhoea, up to 200 mg). Ampoules: 1 or at the most 2 per day as initial or acute therapy for not more than 2 days. Children: 0.5 - 3 mg/kg/day. See full prescribing information. **Contra-Indications:** Peptic ulcer, known hypersensitivity to the active substance, acetylsalicylic acid, or other prostaglandin-synthetase inhibiting drugs. Known hypersensitivity to sodium metabisulphite or other excipients (ampoules). Proctitis (suppositories). **Precautions:** Symptoms/history of gastro-intestinal disease, impaired hepatic, cardiac or renal function; Pregnancy, Porphyria. Caution in elderly. Patients with extracellular volume depletion from any cause. Patients on diuretics, anticoagulants, or antidiabetics. During prolonged treatment, periodic monitoring of liver function should be carried out and blood counts are recommended. Possibility of hypersensitivity reactions to sodium metabisulphite, particularly in patients with asthma (ampoules). See full prescribing information. **Side effects:** Occasional: gastro-intestinal disorders, headache, dizziness, or vertigo, rash, elevation of SGOT, SGPT. Rare: peptic ulcer, gastro-intestinal bleeding, hepatitis, hypersensitivity reactions. In isolated cases: disturbances of sensation, erythema multiforme, purpura, abnormalities of renal function, blood dyscrasias. See full prescribing information. **Packs:** 100 and 1000 tablets of 25 mg; 100 and 500 tablets of 50 mg; 30 tablets of 100 mg (Voltaren SR), 10 suppositories of 12.5 mg, 25mg and 50 mg; 5 and 50 ampoules of 75 mg/3ml. Full prescribing information is available on request. CIBA-GEIGY S.E.ASIA (Pte) Ltd, 4 Fourth Lok Yang Road, Singapore 2262. A. Baur & Co. Ltd, Baur's Bldg, 5 Upper Chatham Street, Colombo, Sri Lanka, R. Joseph and Brothers Commission Agent, 28, 123rd Street, Kandawglay, Rangoon, Myanmar.

1: Skoutakis, V.A., et al.: Review of diclofenac and evaluation of its place in therapy as a nonsteroidal antiinflammatory agent. Drug Intell. Clin. Pharm, 22, 850 (1988)
2: Calculated on the basis of 100 mg daily for 20 days per prescription (1988)



VOLTAREN
Geigy



JAPAN MEDICAL SUPPLY

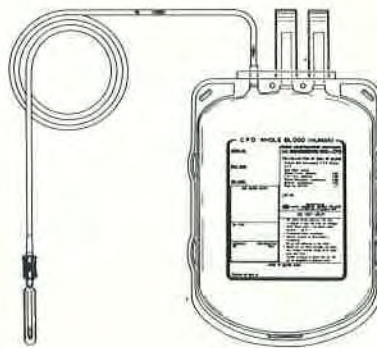
Medical technology.....new advances are being made every day.

Good medical supplies are crucial in making full use of new medical technology to provide better health care. *JMS* recognizes that it has a responsible part in advanced medical systems through disposable medical products and it continues to make efforts to accelerate the progress of health care.

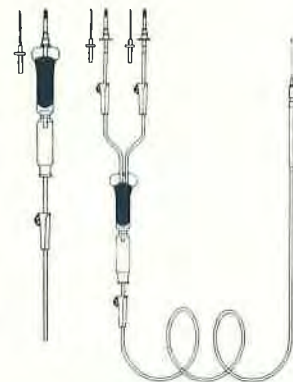
THE WORLD'S BEST QUALITY MEDICAL DISPOSABLE PRODUCTS

Our Range of Products:

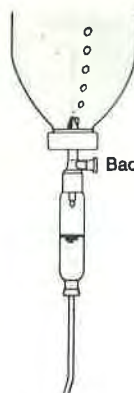
- I.V. Administration Systems
- Blood Collection & Accessories
- Blood Administration Systems
- Syringes & Needles
- Dialysis Products
- I.V. Accessories
- Feeding Systems
- Drainage Systems
- Clinical Examination Products
- Gloves & Surgical Products
- I.V. Hyperalimentation
- Laboratories Products



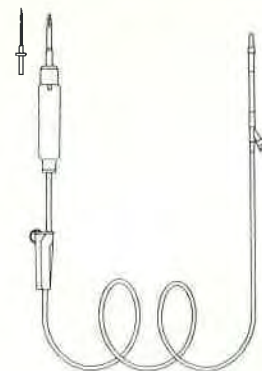
Blood Bag



Transfusion Set



Bacterial Filter



Infusion Set

JAPAN MEDICAL SUPPLY CO., LTD.

12-17, Kako-machi, Naka-ku, Hiroshima, Japan.
Tel: 082-243-1120. Facsimile: 082-246-9079. Telex: 652930 JMSJ.



JAPAN MEDICAL SUPPLY (S) PTE. LTD.

440, Ang Mo Kio Industrial Park 1, Singapore 2056.
Tel: 4571144. Facsimile: 4599564. Telex: RS 36747 JMSSIN.

Ca⁺-antagonist

HERBESSER[®]

(Diltiazem HCl)

**An antianginal agent with
cardioprotective effect**



CONTROL

HERBESSER 100 µg c.i.



- Provides potent coronary vasodilation.
- Causes little or no negative inotropic effects at recommended dose.
- Provides powerful inhibition of coronary spasm.
- Causes no reflex tachycardia.
- Reduces cardiac work by hypotensive action through peripheral vasodilation and heart rate-decreasing action.
- Prolongs exercise tolerance.
- Protects myocardium by improving myocardial energy metabolism.
- Shows a low incidence of side effect.

* Recent studies have shown that Diltiazem is effective in preventing early reinfarction and refractory angina in patients recovering from acute non-Q-wave infarction.

Ref: (N Engl J Med 1986; 315: 423-9)

DISTRIBUTOR:



WALETA (S) PTE LTD
Lam Soon Industrial Building
63 Hillview Avenue #09-17
Singapore 2366
Tel: 7603833

MANUFACTURER



TANABE SEIYAKU CO., LTD.
OSAKA, JAPAN

WALETA (M) SDN BHD
No. 9, Jalan SS 2/75 (1st Flr)
47300 Petaling Jaya
Selangor,
Malaysia
Tel: 03-7760717

The College of General Practitioners Singapore

12TH COUNCIL 1989/91

President Dr Koh Eng Kheng
Vice President Dr Alfred W T Loh
Censor-in-Chief Dr Lim Kim Leong
Hon Secretary Dr Soh Cheow Beng
Hon Treasurer Dr Lim Lean Huat
Council Members Dr Chan Cheow Ju
Dr Huan Meng Wah
Dr John Lim Khai Liang
Dr Richard Ng Mong Hoo
Dr Arthur Tan Chin Lock
Dr Goh Lee Gan

Hon Editor
College Journal

BOARD OF CENSORS

Censor-in-Chief Dr Lim Kim Leong
Members Dr James Chang Ming Yu
Dr Goh Lee Gan

ADMINISTRATION

Administrative Ms Sonia Fam
Secretary
Asst Admin Ms Sandy Ler
Secretary
Senior Clerk Mdm Rose Hoon
Clerk Ms Najmunisa

CONTINUING MEDICAL EDUCATION COMMITTEE

Chairman Dr Soh Cheow Beng
Secretary Dr Richard Ng Mong Hoo
Ex-Officio Dr Alfred W T Loh
Members Dr Goh Lee Gan
Dr Hia Kwee Yang
Dr Omar bin Saleh Talib

Library Dr Chan Cheow Ju
Dr Choo Kay Wee
Dr Chong Hoi Leong

UNDERGRADUATE TEACHING COMMITTEE

Chairman Dr Goh Lee Gan
Secretary Dr Kevin Koh
Ex-Officio Dr Koh Eng Kheng
Members Dr Patrick Kee Chin Wah
Dr Lim Lean Huat

PUBLICATIONS COMMITTEE

Chairman Dr Goh Lee Gan
Secretary Dr Chan Cheow Yu
Ex-Officio Dr Alfred W T Loh
Members Dr Patrick Kee Chin Wah
Dr Leong Vie Chung
Dr Moti H Vaswani

FINANCE COMMITTEE

Chairman Dr Lim Lean Huat
Secretary Dr Paul Chan Swee Mong
Ex-Officio Dr Koh Eng Kheng
Members Dr Leong Vie Chung
Dr Frederick Samuel
Dr Wong Heck Sing

RESEARCH COMMITTEE

Chairman Dr Chan Cheow Ju
Secretary Dr Bina Kurup
Ex-Officio Dr Alfred W T Loh
Members Dr Paul Chan Swee Mong
Dr Choo Kay Wee
Dr Shanta C Emmanuel
Dr Goh Lee Gan
Dr Kevin Koh
Dr Lee Pheng Soon
Dr Lim Lean Huat

COMMITTEE ON PRACTICE MANAGEMENT

Chairman Dr Huan Meng Wah
Secretary Dr Henry Yeo Peng Hock
Ex-Officio Dr Koh Eng Kheng
Members Dr Ganesh Balasundram
Dr Kwan Kah Yee
Dr Tan Chek Wee

NEW Tegretol Controlled Release

carbamazepine in a formulation to reduce peak plasma levels



Tegretol CR provides

- better patient acceptance
- better compliance
- easy administration
- dosage flexibility

For new patients with epilepsy – simply a better way to prescribe Tegretol.

Presentation: Carbamazepine tablets of 200mg, slow release tablets of 200mg and 400mg, syrup (20mg/ml).

Indications: Epilepsy. Trigeminal neuralgia. Mania and manic-depressive prophylaxis. Alcohol withdrawal syndrome. Diabetes insipidus centralis. Painful diabetic neuropathy.

Dosage: Initiate treatment with a low dosage (100-200mg), which should gradually be increased to 200-1,600mg/day, depending on indication and severity of illness. Children: 10-20mg/kg/day. See full prescribing information.

Contra-indications: Known hypersensitivity to carbamazepine or to tricyclic compounds. Atrioventricular block.

Precautions: Pregnancy, lactation, severe cardiovascular disease, liver and kidney disease.

advanced age. Initial and periodic blood counts and liver function tests. Caution in patients using anticoagulants or oral contraceptives.

Side effects: Mild side effects (see full prescribing information) are mostly transient, disappearing after 7-14 days or upon reduction of the dosage. Rarely: hyponatremia, allergic skin reactions. Very rarely: exfoliative dermatitis, Stevens-Johnson syndrome, leucopenia, thrombocytopenia, agranulocytosis, aplastic anaemia, thrombo-embolism, hepatitis, acute renal failure, hair loss.

Packs: Tegretol 50 and 500 tablets of 200mg and 250ml syrup of 100mg/5ml.

Tegretol CR-50 and 200 tablets of CR 200mg; 30 and 200 tablets of CR 400mg.

Full information is available on request.

CIBA-GEIGY S.E. ASIA (Pte) Ltd 4 Fourth Lok Yang Road, Singapore 2262.

THE SINGAPORE FAMILY PHYSICIAN

The College of General Practitioners Singapore
College of Medicine Building
16 College Road, #01-02 Singapore 0316.

Vol. XVI No. 3 July/September Price to Non-Members S\$5.00 M.C.I(P) No. 18/3/90

CONTENTS

	Page
The Twelfth Council 1989/91	99
EDITORIAL	
Change - Bane or Boon?	103
The WONCA Bali Conference 1990	105
1990 WONCA REGIONAL CONFERENCE: ASIA-PACIFIC REGION	
The Family Physician as a Health Resource Allocator Adhyama	107
Strategy in Vocational Training Goh L G & Lim K C	111
Vocational Training in The United States Bauman S M	119
Workshop Recommendations on Strategy on Vocational Training Suchato R	121
ORIGINAL ARTICLES	
Pregnancy in Women Aged 35 and Above Phua S M	123
Optimizing Subcutaneous Insulin Injections Tan K T	127
The Management of Symptomatic Haemorrhoidal Disease Seow C	131
HOME STUDY SECTION	
Use of Drugs in the Elderly Omar B S T	135
ECG Quiz Singh B	139
NEW BOOK ANNOUNCEMENT	141
13th WONCA World Conference on Family Medicine	145
GUIDELINES FOR AUTHORS	
The Singapore Family Physician	146

A NEW INDICATION FOR A BREAKTHROUGH PRODUCT



Regaine[™]
TOPICAL SOLUTION minoxidil 2%

NOW INDICATED FOR TREATMENT OF
HAIR LOSS IN WOMEN



Further information is available on request.

Distributed by:

Upjohn Co. S.A., Hennessy Road P. O. Box 20580, Hong Kong.

F.E. Zuellig (M) Sdn. Bhd. P. O. Box 10251, Kuala Lumpur, 50708, Malaysia.

The Getz Corp. (S) Sdn. Bhd. P. O. Box 234, Singapore 9004.

PF 17218 18906 TRADEMARK, REGAINE

CHANGE - BANE OR BOON?

The Book of Job revealed that the patriarch was tested in his 3 most precious possessions. He was deprived of his wealth or property, then his children or seed and lastly his health or well-being. The ordinary mortal would be broken if he was dispossessed of any one of the three but to have been dispossessed of all in serial order would have been catastrophic and fatal.

The work of the doctor whether a general practitioner or a specialist has a lot to do with deprivation or change in any or all of his patient's precious possessions. The more sudden or abrupt the baneful change the more the hurt and therefore the more serious the consequences. Even changes in improvement are not all that innocent and may have consequential effects.

Rahe R H (1972) drew attention to the fact that changes in life are of importance in influencing near-future illnesses. For a start some 40 odd life experiences like "death in the family" or "marriage" were gathered in a scale called the Social Readjustment Rating Scale (SRRS) which were then offered to a large representative cohort of people. They were asked to make an estimation of the degree of adjustment needed for each event. The "marriage" event was deliberately scored at 500. Each event was pegged to either above the scale of 500 or below it. The scores obtained were then divided by 10 for easy computation. The resulting values now named as Life Change Units (LCU) become valuable in evaluating in numerical and comparative terms how serious a change plays in the near-recent illness of a patient. The SRRS has been tested on different populations in different cultures and there is remarkable similarity in the results.

Homeostasis

The word homeostasis is familiar to all who have had a physiological education. The human body functions well only within set parameters of normalcy. When the delimiters at either limit are exceeded there is malfunction and insituation that do not tolerate wide changes for any length of time, death may result. Perhaps this

homeostatic regulation may explain why sudden changes whether of a physical or physiological nature are ill tolerated and may at times be calamitous.

The brain as a model

The homeostatic regulation of the brain depends on three anatomical structures. They are 1. the network of cerebral capillaries, 2. the arachnoid membrane covering the brain surface and 3. the diffused highly vascularized choroid plexus.

The choroid plexus and the arachnoid membranes interpose between 2 fluid compartments i.e. the blood and the cerebrospinal fluid (CSF). The arachnoid membrane is largely passive being generally impermeable to water soluble substances. The choroid plexus performs a kidney like function for the brain. It actively and selectively regulates concentrations of molecules (e.g. proteins, vitamins, ions, aminoacids and metabolites) in the CSF and provides it with nutrients extracted from the blood. The exchanges substances freely with the interstitial fluid bathing the cerebral neurons and supporting glial cells, changes in one fluid affect the other fluid. The elaborate mechanisms to maintain homeostasis of the brain should make us pause in wonderment.

The homeostasis of the brain is not the only model. Every organ of the body has elaborate homeostatic regulators and a breakdown of these regulators spell disaster.

The Lesson

The astute physician will always be on the look out for changes in the life of his patients - the physical changes are no less important than the physiological. The former may be overlooked if the focus is exclusively in terms of biochemical numeric figures.

In advising and advocating treatment due consideration should be given to avoid changing so much of the patient's life that he finds difficulty to cope with such changes. A cushion

of time and dialogue must be accorded so that he may come to terms with the need for change.

Words of comfort come from an unexpected source. Frank C Netter whose anatomical drawings are legend observed that "Anatomy itself does not change, but the way we look at it has" after 5 decades of dedication to his special gift. The same truth is evident in change itself. Since change is an inevitable part of life, the strategy against the baneful effects is to prepare for it. The Book prepares those who accept its truth with these timeless verses:-

To every thing there is a season, and a time to every purpose under the heaven:
A time to be born, and a time to die; a time to plant, and a time to pluck up that which is planted;
A time to kill, and a time to heal; a time to break down, and a time to build up;

A time to weep, and a time to laugh; a time to mourn, and a time to dance;
A time to cast away stones, and a time to gather stones together; a time to embrace, and a time to refrain from embracing;
A time to get, and a time to lose; a time to keep, and a time to cast away;
A time to rend, and a time to sew; a time to keep silence, and a time to speak;
A time to love, and a time to hate; a time of war, and a time of peace.
What profit hath he that worketh in that wherein he laboureth?
I have seen the travail, which God hath given to the sons of man to be exercised in it.
He hath made everything beautiful in its time: also he hath set the world in their heart, so that no man can find out the work that God maketh from the beginning to the end. (*Ecclesiastes 3:1-11*)

LVC

EDITORIAL

THE WONCA BALI CONFERENCE 1990

Accolades must go to our Indonesian colleagues for hosting the WONCA Regional Conference in Bali in June this year. It had something for everybody. There were some, the minority, who hardly stepped into the Conference Hall but were found either on the beach or on the way to Denpasar or some other exciting places in Bali. Obviously, they did not know what they were missing in the events happening in the Conference Hall. For those who hung around the Conference Hall, they were amply rewarded with knowledge of what is happening to Family Medicine in and around the Asia-Pacific region. The Conference theme was Family Practice Towards the Year 2000: Prospects and Challenges.

PLENARY SESSIONS AND WORKSHOPS

The hardcore of the Conference were the daily plenary sessions, each addressing an aspect of the Conference theme, followed by workshop discussions. The latter were complete with appointed workshop discussants and workshop chairman and co-chairman. A total of 14 plenary papers were delivered in the four sessions covering the aspects of Cost containment and Professional Freedom, Indicators for Quality Assurance in General Practice, Education and Training for General Practitioners/Family Physicians in the Asia Pacific Region and Family Physician/General Practitioner in Rural Areas. The Chairmen of the Workshop discussions had an outcome to fulfil. They were given the tasks of putting together the workshop recommendations put up by participants from the floor in addition to those tabled by the plenary speakers. The breakfast meetings of the plenary speakers, workshop discussants, chairmen with the Conference organisers were invaluable in ensuring an outcome that will be documentable. Participation from the floor on the whole, was good in all the four plenaries. The workshop recommendations for vocational training and two of the papers presented at the Conference on this topic are reproduced in this issue of the Singapore Family Physician.

SYMPOSIA

The five symposia were sessions for "show-and-tell" and had a varied menu for one to

choose. They covered Geriatrics and Gerontology, Traditional Medicine and self-medication, Generic Drug Policy, Health Insurance, Medical Computing and social marketing of contraceptives. A total of 16 papers were presented. Dr Michael Kidd's authoring programme on computer was a hotspot.

FREE PAPERS AND POSTERS

A total of 40 free papers and 8 posters were presented. Three came from Singapore: Using role play to teach consultation skills (Dr Kevin T C Koh), Elderly Incontinence in Singapore (Dr Chan Cheow Ju) and Continuing Medical Education of GPs in Singapore (Drs Fong Ngan Phoon and Goh Lee Gan).

GROWING INTEREST IN FAMILY MEDICINE IN ASIA PACIFIC REGION

There is now a growing interest in Family Medicine amongst countries in the Asia Pacific region as evidenced by the enthusiasm of key players and participants in Family Medicine and the work that is being done in each country to develop this medical discipline. The Conference was a rallying point and forum for the continued development of Family Medicine in this part of the world. Two events should be recorded for future reference.

The first was the Resolution of the Regional Conference of WONCA (Asia-Pacific Region) held in Bali. At the regional meeting of Presidents and Representatives of Colleges/Academies of WONCA (Asia-Pacific Region) held at the Pertamina Cottages in Bali on Monday, 25 June 1990 a resolution was passed that:

"in pursuit of Health for All by the year 2000 through the Family Doctor/General Practitioner, the Colleges/Academies of WONCA in the Asia-Pacific Region proposes that the setting up of a Department of Family Medicine/General Practice in a university in Indonesia as a pilot project be given priority consideration."

The second event is the meeting of the Asia-Pacific Working Party on Training with

Dr Lindsey Knight as the Chairman and Dr Clarke Munro as the Hon Secretary. At the meeting, the Working Party focussed on three areas - the development of common training programme (certain segments), examiner/teacher exchange and a task force to update information on training and examination, to establish an international list of GP examiners/teachers and to organise trainer training courses. As Dr Linsey

Knight pointed out there is a need for each member country to continue the work beyond the two hours of intense enthusiasm of the meeting if we as a corporate body of WONCA is to move anywhere. Well said.

And so, until the next WONCA regional meeting in the Philippines.

GLG

THE FAMILY PHYSICIAN AS A HEALTH RESOURCE ALLOCATOR

Adhyatma, MPH*

Participants to the WONCA Asia-Pacific Regional Conference, Ladies and Gentlemen,

It is indeed a great honour and privilege for me to address this conference of Family Physicians. Family physicians in my view has a central and prominent role to play, because they are responsible for taking care of the health of the family, the smallest unit of a social system. In this context "Family Health" includes and means more than the total or sum of the health status of the individual members, for it takes into account the interrelations and interdependence of the state of physical, mental and social health of the individuals who live together, determining and being determined in part by the effective functioning of the family (household or group) as a biological unit within a cultural setting.

The family is an active social unit always changing and always related to other families within society of which it is a part. Its functions are complex and far reaching. One can describe and group these functions into biological, psychological, socio-cultural, economic and educational functions.

Each of these areas of functioning are related and affected by all the others, and all affect family well-being. Family health as in social life, operates as a system; physical ill-health can produce mental effects and vice-versa, and both an influence the status of family well-being.

It is within the context of this concept of family health that family physicians have to provide care and services to the family as one entity and in its totality. In doing so the family physician has the task not only to make deci-

sions for the family in distributing the health services the family needs but also to allocate the necessary resources accordingly in such a way as to protect the family against the financial ravages of unpredictable and unpostponable medical (health) care, expenditures. The family physician is thus put in a vital position to make decisions concerning the volume, content and quality of services and relate these to his personal knowledge concerning the availability of resources the family has at their disposal, or in other words with cost of services.

I am sure all of us have seen families fall into large debts in order to pay medical services, and also notice how long it took them to get out of those debts.

The role of the family physician in this context is certainly not an easy one. Although his decision is taken at the "point of service contact" or at the micro-level, his decision is also related to other decisions on resource allocation and cost-containment, taken at other levels of the health services organization, regional as well as at the national or macro levels.

In other words, a decision to allocate more resources to a patient at the point of service contact, will mean that the patient has to pay more to obtain more sophisticated services, but on the other hand it also mean that a larger volume of high-cost services will or are being consumed, causing naturally a growth in the overall health expenditure.

It must therefore be realized that whatever decision a family physician makes at the micro-level, it certainly will affect the macro level. Macro level decisions, on the other hand, can also influence or shape family physician's decisions at the micro level.

**Minister of Health, Republic of Indonesia*
Opening Address, delivered
on 24 June 1990

I am sure that you will hear more about examples on how these influences work and also in greater details, from the next speakers on rational use of hospitals, rational prescribing or drug-use and the implementation of generic drug policies.

MEETING LARGE NEEDS

Medical practitioners have always been faced with the problem of how to meet large needs with limited resources. In war situations, the effectiveness of available resources as well as its range of costs is always limited, the physician is seldom asked, to manage these limited resources efficiently. From the ethical point of view he can ignore the allocation problem or cost problems here, because all what is expected from him, is to do everything possible to cure illness and keep the patient alive.

Where the needs are clear and the possibilities to fulfill those needs are limited, the process of decision making is quite easy and very straightforward.

Nowadays this process is becoming more and more difficult, because health technology has developed tremendously within these last few decades, bringing with them other problems such as personnel problems; etc.

With the development of technologies the needs for health services are also growing. The health services therefore also share the fact that growing expectations are always paired with growing demands and increasing feeling of unsatisfaction. This might be one of the causes for the growth of health services. Not only does the availability and the provision of services creates their own demand, but unfortunately, it also creates an increasing dependency on these services, and thus decrease the people's ability to help themselves.

Decision making in this situation is becoming more complex and difficult, because other factors have to be taken into consideration, among them is the question of "how are we going to pay for, and learn to manage, the ever expanding technolo-

gies and means of extending life regardless of its quality" that medical advancement bring.

In answering these questions we have to focus on public health and the common good rather than the individualized technological cures, and we must seek a better balance between length of life and quality of life, and between caring and curing.

All this means that we have to balance for example between basic immunization and in-vitro fertilization (tube-baby) or balancing between low unit cost and good results benefitting many people interventions (immunization) and a high unit cost, poor result and only benefitting a few people interventions (tube-baby with only 20% success rate). There are many more examples of services/interventions like the ones I just mentioned above, available in the health services market today.

Ultimately the problem seems to lie in our deepest aspirations, values and beliefs. We have always believed that medicine should attempt to meet all individual needs and to seek cure for all diseases, and there is also a belief that such a goal is economically feasible if only sufficient efficiency, enhanced by biomedical research and cost-effective delivery, are brought to bear.

Not only are the above mentioned beliefs impractical and unaffordable, they also fail to take account of inherent human limitations, especially the simple fact that the human body must eventually age, decline and die, however great our medical progress.

Medical practice has always recognized that there were limits to what might be done for one particular person, especially if the limit was due to sheer lack of scientific knowledge, or lack of time to mobilize necessary resources, or in a fee paying system, if the patient could not afford to pay any more treatment. Only in dire emergency was it acceptable to adopt a triage system designed to concentrate the limited resources where they would do the most good.

The advances in medical practice over the recent decades it seems, have outgrown our capacity to generate extra real resources needed to support them. This is the reason why health economists is coming to play a more influential role in health care policy especially in assisting us to better allocate our scarce resources, at all levels (macro, regional as well as at micro or point of service contact level), and why the recommendations of health economists are often seen as unethical and as a threat to the physicians clinical freedom.

The essence of the problem here seems to be the belief that asking physicians to have regard to cost will destroy the doctor-patient relationship. This is based on the belief that physicians have always exercised their clinical freedom, in such a way that only the interest of the patient are taken into account. But as I already mentioned before the role of the physician is also to help the patient in rationing the access to health care.

Does this acceptance of this function compromise the doctor's clinical freedom? It is not easy to identify or isolate the part played by awareness of costs when individual physicians decide whether or not to investigate or treat a patient.

It should however be realized that people who act regardless of cost are usually termed fanatical, not ethical, and fanaticism is just as dangerous in medicine as it is in other walks of life.

Those therefore, who refuse to allow cost to influence their actions are actually behaving unethically.

THOUGHTFUL ALLOCATION

It is fortunate that there seem to-day a widespread acceptance by the public as well as the professions that resources are not unlimited and that the physician has a responsibility to society, through a thoughtful allocation of scarce resources, as well as to the individual patient. This seems to be a more constructive role for the physician to see himself in, and for him to realize that both doctors as well as

economists are working within the same objectives, namely the preservation of life and the alleviation of suffering.

These objectives can only be realized ethically by accepting that compromises are necessary when ethical principles conflict, that one of these compromises is the balancing of benefits between one group of patients and another. In order for such a balancing to occur the physician need to know what the cost of their actions are, and need to be placed in a situation where they are properly motivated to act on that information, along side the clinical information available to him.

Cost minimization in isolation from any consideration of benefit is as non-sensical and unethical as benefit maximization in isolation from any consideration of cost. Both benefit and cost must be considered.

CONTROL COST

The problem for all of us, regardless what role we are playing or at whatever level of the health services organization, the macro, regional or micro level, is to control cost and at the same time to increase access to care for many of those who are at present underserved.

Politically and economically, those goals probably cannot be achieved without a national health insurance plan that establishes a minimum adequate level of care for all and sets firm upper limits on high technology curative medicine.

To achieve or ever come near those goals or sustain them overtime, is not likely, unless we limit our aspirations for unlimited medical progress and return to greater acceptance of illness and death as part of our life.

This demands a radical change in our thinking.

With this statement I am going to end presenting my views about the role of family physician in cost containment and its relation to his professional freedom. It is my hope that family physicians in making

his decisions must always realize that it is his task to balance between common good and individualized technological cure, and that whatever decision he makes at the point of service contact will influence, in a positive or negative way, the overall health expenditure.

I am sure that by realizing all this and with the belief that there is nothing immoral about becoming more efficient in the provision of our services without sacrific-

ing the quality of care, the family physician can better fulfill his expected role as health resource allocator.

Finally, I hope that your deliberations will meet with success and that each of us will leave this conference fully charged with new views and ideas, new hopes and commitment for a better future of our society.

Thank you.

STRATEGY IN VOCATIONAL TRAINING

*Goh L G, MBBS (Sing), MMed (Int Med) (Sing), FCGP (Sing), MRCP

**Lim K L, MBBS (Sing), FCGP (Sing)

ABSTRACT

Vocational training is important in preparing doctors for family practice. With the exception of Australia and New Zealand, countries in the Asia Pacific region are in various stages of developing a structured programme of vocational training.

For example, Singapore has only very recently embarked on such an educational endeavour. This paper, which will touch on the Singapore experience, is not to offer a blueprint but to share some insights that we have experienced.

Developing a vocational training programme requires a systems approach. One has to look at it from (a) a strategic planning considerations (b) from the operational viewpoint where attention has to be paid to manpower, money, materials and methods and (c) in relation to international links and support.

Syllabus content, teaching methods, course evaluation and feedback, library resources, development and nurture of the teaching faculty as well as selection of training sites are part and parcel of the strategy.

INTRODUCTION

The need for vocational training for the General Practitioner/Family Physician has been felt as early as 1882 by a working party of the metropolitan Counties Branch of the British Medical Association which noted that "no incon-

siderable number of recently qualified medical men have no idea of the real duties of general practitioners until they actually engaged in practice; many of them discover that their work is hardly that which they had anticipated." It recommended that "before a student receives his licence to practise he should produce a certificate of having studied for six months with a general practitioner, or a public institution, where he has personal charge of patients at their own homes."¹ Since then, many writers have expressed the same need. One of them is Keith Hodgkin who described in the Preface of the first edition of his book, *Toward Earlier Diagnosis*² of two patients that he encountered when he first went into general practice. The first was a telephonist who had "dizzy spells in the busy spells" and the second was a short-sighted man who gave a casual history of a "grey cloud" that had recently appeared in the visual field of his right eye. In spite of his long hospital training, he had little idea of how to tackle the first problem and did not realise that the second was an acute eye emergency requiring immediate admission to hospital.

We are fortunate that today we have the world experience of vocational training in General Practice/Family Medicine from America, Canada, United Kingdom, Europe and Australasia, some of which date as far back as the 1950s. In many countries of the Asia-Pacific region, this subject has become a growing topic in medical education in recent years.⁴

Such vocational training development however, is not without problems, and countries in the world, Asia-Pacific region included, have to contend with secondary care dominance, the free access of patients to specialists, poor image of general practice in the eyes of the patient, general practice being the last choice of the doctor, and a heavy service load. These are fortunately not insurmountable problems and what is needed is a strategy for development.

Paper delivered on 27 April 1990

*Senior Lecturer in Family Medicine
Department of Community, Occupational
& Family Medicine
National University of Singapore

**Censor-in-Chief
College of General Practitioners
Singapore

This paper attempts to draw up an agenda for action that deals in turn strategic planning, operational aspects and international links and support in relation to vocational training.

STRATEGIC PLANNING

There are four items to be considered in the agenda for action under strategic planning, namely the training package; resources; who shall be trained; and establishing the place of General Practice/Family Medicine.

1. THE TRAINING PACKAGE

The training package is the tangible part of the vocational training endeavour and its strategic planning requires making decisions on the following four elements:

(1) End-product Statement

It is necessary to have a clear idea of what the vocational training programme is trying to achieve. This will be country dependent. In its widest scope, at the end of training, a General Practitioner/Family Physician should be equipped:

To provide whole-person, continuing care to individuals and families in their community setting;

To be available and make adequate provision for round-the-clock cover for emergencies.

To recognise the central importance of the family in health and illness;

To recognise the need to assess individuals in physical, psychological and social terms in context of family and community environment; and

To be highly competent clinically, caring and committed to the health and welfare of patients.

(2) Curriculum Content

The emphasis of the curriculum will differ from country to country. In the United Kingdom a set of five areas was defined by a working party of the Royal College of General Practitioners in 1972 (Fig. 1).

In developing a vocational training curriculum for the Family Medicine Traineeship Programme of the Ministry of Health in Singapore, which was initiated in 1988, the

College of General Practitioners defined five areas of theoretical content of Family Medicine as listed in Fig. 2. This scheme attempts to bring together and leave explicit the contribution of currently known areas of medical knowledge (areas 2, 3 and 4) to the knowledge base required of the future general practitioner.

(3) Duration

Presently, the duration of vocational training in the Asia-Pacific region varies from one to four years.⁴ Similarly, in Europe, the duration is also variable from one to five years.⁶ In the United States it is 3 years and in Canada 2 years.⁷ The twelve European Community (EC) countries in a directive from the original Treaty of Rome subscribe to legislation that from Jan 1 1995, no EC country will be able to allow a general practitioner to take up practice in its social security system unless he or she has received the minimum of two years full-time post-graduate training, of which at least 6 months are spent in an approved practice.^{8,9} The consensus of the New Leewenhorst group however is a three year period of which at least twelve months is spent in general practice.⁶ The WONCA Asia-Pacific Working party is examining the concept of 2 years basic training and 1 year advanced training proposed by Munro.⁴ Perhaps we can generalise by the statement that in the current world thinking, the vocational training should be a minimum of 2 years but preferably three years.

(4) Methods

It is also reasonably clear that the training general practitioner should be exposed to three methods of acquiring knowledge and practice skills, namely through theoretical teaching (such as the British day release course or equivalent), hospital postings and posting to an approved General Practice setting. Drawing on the experience of a national survey of training for general practice in the United Kingdom, a formal training scheme is preferred to trainees arranging their own hospital and general practice posts.¹⁰

The Singapore programme is used to illustrate the training package. Initiated in

1988 as a tripartite effort of the Ministry of Health, the College of General Practitioners and the University, it is a two year programme (Fig. 3) consisting of 8 three monthly rotating postings of which one is the primary care posting and the remaining 7 are hospital postings (of which 4 are compulsory, namely medicine, surgery, obstetrics & gynaecology, paediatrics and 3 elective options drawn from orthopaedics, skin, psychological medicine, ENT and Eye).

The theoretical teaching component is the structured family medicine teaching programme (FMTP) made up of 8 modules of three months. Each module in turn is made up of 8 Saturday afternoon sessions, each of which is conducted from 2.30 pm - 5.30 pm. Each module is made up of 3 sessions (submodule A) based on practice skills (in module 1), care (in module 3), care of an age or sex specific population group (in modules 2, 4, 6, 7 and 8) and community medicine (in module 5); 4 sessions of internal medicine based on one or more body systems; and 1 session on practice management which deals with practice and medico-legal issues. The FMTP for 1990-1992 is given in Fig. 4 and 5.

2. RESOURCES

About vocational training resources there are 3 Ms to be considered. The first is material resources and the key educational resources that should be made available are reading materials, teaching aids, check-lists and handbooks. Post-graduate learning depends a great deal on self-study and in this context current journals are more useful than standard texts; the latter are useful as supplementary sources of information and a source for quick reference. Unless there is a large medical library or well stocked practice libraries in the vicinity, it may be necessary for training centres to arrange for photocopies of current key journal articles for trainees. Many countries have already developed useful teaching aids and those in the early stages of developing vocational programmes may find it time saving to get in touch with these resources than to re-invent the wheel.

The second M is manpower and these include trainers both in and out of hospitals and resources persons. There is a need to ensure a general practice vocational orientation where

specialists are being pressed into service, something which is very necessary in the short run. There must be provisions made to train the trainers. This will be considered further under the section on operational aspects.

The final M is money. There is a need to look for different sources to cover administration costs, honorariums and salaries for trainers, and purchase of educational materials. Where government support for the vocational training programme is present, this will help ease the burden somewhat. The drug industry, self financing by the trainees may help to defray costs. Perhaps the most important "money" is the honorary yeoman service provided by many general practitioners who believe in the cause of vocational training. We need more of such people.

3. WHO SHALL BE TRAINED?

This is the third item on the strategic planning agenda. The short answer is "those who want and can be trained for independent, unsupervised practice". In the short run there is a need to cater for two streams of doctors, namely, those in practice now who are encouraged to upgrade themselves and those immediately postgraduate. In the latter, because of the limitation of training places and resources selection criteria will be needed.

4. ESTABLISHING PLACE OF GENERAL PRACTICE/FAMILY MEDICINE

This is an important strategic point. Unless there is an acceptance of this discipline as being an important contributor to the total health care, good general practice will not develop and vocational training efforts will be frustrated. This requires the conjoint efforts of many both within and without the general practice community. The College has a vanguard role to play in convincing and seeking a mandate from members within the profession and convincing the significant others. University recognition is important, both in the undergraduate and postgraduate contexts. Government recognition is the key anchor point and without Government recognition, vocational training will remain a private affair, unsupported and unrecognised. There is also a point in working towards a national programme for the

same reasons.

A tangible career structure is important in attracting the best doctors to general practice be it in the Government service, in the University or in the community. Unless there is a perceived stable future, many doctors will continue to opt for the established specialties.

If a mandate for compulsory training can be obtained, it will help to establish the need for standards and with it vocational training. This is however a development two or three stages down the road of vocational training development. The United Kingdom has led the way in 1981¹¹ and the European Community countries accepting this in 1995.^{8,9}

GP registration is another development in the direction of establishing the place of general practice as has been implemented in Australia in December 1989.¹²

OPERATIONAL ASPECTS

There are six items to be considered in the agenda for action under operational aspects, namely organisation and administration, trainer development, theoretical teaching, hospital postings, general practice posting and assessment.

1. Organisation and Administration

There is a need for a central body for policy making and master planning. This body should include representation from the Government, College, and University. Examples are the JCPTGP of the British vocational training programme and the Vocational Steering Committee in the Singapore programme.

Local body or bodies, depending on the size of the country, also need to be set up to implement the programme and do the necessary liaison work. In the British programme there are the regional advisors who co-ordinate the programme in a region of the country and course organisers who organise and run the theoretical teaching sessions. In the Singapore programme, the posting programme is co-ordinated in the Ministry of Health by the Director, Manpower Planning for the hospital postings and the Medical Directors of the Primary Health Division, Ministry of Health for the primary care posting. The College representative co-ordinates the Family Medicine Teaching

Programme and also postings to GP practices. Much liaison work is necessary to ensure the smooth running of any vocational training programme.

2. Trainer Development

Trainer development is an important operational activity. Specialist resource persons and hospital trainers need to be familiarised with vocational needs of the future general practitioner. Family medicine trainers need to be trained in teaching methods, content and philosophy of family medicine, assessment techniques and motivation of trainees including solving the incidental problems that may arise in the course of training.

Trainer workshops form a channel for sharing and enriching the experience as well as problems encountered by trainers. These can also be a forum for developing teaching aids, planning teaching programmes and other activities of administrative nature.

3. Theoretical Teaching

The implementation of the theoretical teaching programme is another organisational activity. Such programmes need to be structured and yet varied. Oswald has described the teaching methods used in these sessions and their receptability in 1973.¹³ For good attendance, it is preferable to hold them after hospital working hours and should involve the trainees in the teaching and learning process. There are obviously many possible innovations judging from announcements in various family medicine journals.

The framework used in Singapore (see Fig. 4 and 5) is the three hour Saturday afternoon session which consists of two parts, one part before tea which has been dubbed the "teachers' show and tell" consisting of presentations by resource persons and the other part after tea dubbed "trainees' contributions" consisting of either workshops, case presentations, journal club or roleplay. In our experience, case presentations and discussions appear to be most beneficial. Workshops on problem solving using "canned" scenarios provide some variety but one should avoid an overuse of them. Roleplay has only been used in single communication session on the course. Discussion on video-taped recording of consultations are being considered.

4. Hospital Postings

Hospital postings form a necessary part of the training programme for the acquisition of practice skills and working knowledge in different areas of medicine. These also provide opportunities for hospital trainers to get to know general practice needs. A good liaison with hospital teachers by those in charge of the vocational training programme is vital. There is a continuing need to balance between service and training needs: a philosophy of give-and-take between the trainee, hospital trainer and the hospital establishment is perhaps the only way to a win-win situation.

To guide the hospital trainer and to set directions for the trainee, a handbook of postings checklist is a necessity. In drawing such a set of checklists for the Singapore programme, the authors found the set produced by the Hongkong College of General Practitioners⁴ to be useful and have used many of the lists with appropriate modifications.

The number of postings that can be covered in the two year period is eight if a 3 monthly rotating programme is possible. This short length of time tends to be disruptive to hospital departments compared to the six monthly postings. Nonetheless, the three monthly programme has been implemented in Singapore thanks to the Director for Manpower Planning in the Ministry of Health. This is one example of a trade-off between service and training in favour of training needs.

5. General Practice Postings

These are often hard to organise and much organisational effort is required in the selection of trainers and training practices. The British have gone a long way in this, including setting up requirements criteria for trainers and their practices. A visiting scheme helps the trainers to maintain the necessary standards. From the national survey in 1989, more trainees believe that their trainers gave "value for money" for the trainer's grant than in 1980. The amount of teaching received was the single most important factor in this belief. Trainees who were satisfied with their teaching received an average of 4.4 hours' teaching a week, which is considerably less than the seven hours a week (two sessions) recommended by the Joint Committee on Postgraduate Training for General Practice.¹⁰

In the Asia-Pacific context, Government-run health centres are potential training sites provided a balance between service and training can be struck. The trainees should not be expected to carry the full service load. Whether Government-run health centres be main centres and GP practices be supplementary centres or vice versa will vary from country to country.

In Singapore, the well-developed, one-stop, new generation Government polyclinics make them good training sites. Selected GP practices provide short periods of attachment to round off the total learning experience of the trainee.

Trainees can learn in various ways in the practice setting, ranging from sitting in, consulting the trainer where necessary, one-to-one tutorials besides participating in the clinic meetings.

For doctors already working in their practices, video-tape discussions of their consultations, tutorial sessions, Balint type discussions and case presentations are possible teaching and learning methods.

6. Assessment

Assessment of progress is a necessary part of training. There is the formative assessment which seeks out the strengths (hills) and weaknesses (valleys) of the trainee in terms of practice knowledge and skills, the goal being to help the trainee fill up the "valleys." Then there is the summative assessment which can be progressive or terminal which assess performance in a "snapshot" sort of way. The current thinking is that both should be employed to supplement one another.

There is the exit examination for certification purposes in many countries. There are pros and cons of its place in the vocational training programme. If there is an exit examination, the use of external examiners is a necessity to ensure creditability of the examination process.

INTERNATIONAL LINKS AND SUPPORT

There is the final item on the agenda for action and an important one. There is now a wealth of experience on vocational training available worldwide, compared to forty years ago when formal vocational training programmes for general practice were then just starting.

External experts are invaluable in many ways and at different times in the life-history of the vocational training programme. They include helping the host country establish the acceptance of Family Medicine/General Practice by the community; in providing expert advice on teaching training; helping in the organisation of teacher workshops to develop local teaching methods and materials, and in helping to set up assessment programmes.

CONCLUDING REMARKS

Vocational training development is a challenging endeavour, requiring as it is to surmount the many obstacles that stand in the way to its development. It needs an agenda for action, such as one that has been discussed, looking at strategic planning, operational aspects and international links and support. Finally, one should actively look for assistance where this is needed, for as John Donne puts it:

No man is an island, entire of itself; every man is a piece of the Continent, a part of the main.

This is true of vocational training in General Practice/Family Medicine in more than one sense of the word.

REFERENCES

1. British Medical Association. Report of a Working Party of the Metropolitan Countries Branch, 1884.
2. Kieth Hodgkin. *Toward Earlier Diagnosis*, 5th ed. Edinburgh: Churchill Livingstone, 1985.
3. Horder JP & Swift G. The history of vocational training for general practice. *J Roy coll Gen Pract* 1979, 29: 24-32.
4. Munro C. Report to WONCA on Visit to SE Asia, Mar 7-Apr 1, 1987.
5. Royal College of General Practitioners. *The Future General Practitioner, Learning and teaching*. London: BMA House, 1972 pg v-vii.
6. Heyrman J & Spreeuwbergh C (ed). *Vocational Training in General Practice*. Proceedings of a workshop on 15-18 October 1987 organised by the New Leeuwenhorst Group. Netherlands: New Leeuwenhorst Group, 1989 pg 198-209.
7. Geyman JP & Fry J (ed). *Comparative View of Family Practice in Developed Countries*. In: *Family Practice, an International Perspective in Developed Countries*. Connecticut: Appleton, 1983 pg 161.
8. Horder J. Vocational training for general practice in the European Community. [editorial]. *J Roy Coll Gen Pract* 1988, 38, 341-345.
9. Evans PR. Nineteen ninety two. [editorial]. *J Roy Coll Ven Pract* 1990, 40, 91-93.
10. Crawley HS & Levin JB. Training for general practice: a national survey. *Br Med J* 1990; 300: 911-5.
11. Hasler JC. History of vocational training for general practice: the 1970s and 1980s. *J Roy Coll Gen Pract* 1989, 39, 338-341.
12. Bollen M. Report to WONCA Council Executive as RACGP representative on WONCA Council, 1990.
13. Oswald NTA. Assessing release courses in vocational training. *J Roy Coll Gen Pract* 1979, 29, 33-37.
14. Hongkong College of General Practitioners. *Handbook on vocational training*.

FIG. 1. CURRICULUM CONTENT OF VOCATIONAL TRAINING (UK)

- I Clinical practice - Health and diseases
- II Clinical practice - Human development
- III Clinical practice - Human behaviour
- IV Medicine & Society
- V The Practice

FIG. 2 CURRICULUM CONTENT OF VOCATIONAL TRAINING (SINGAPORE)

- 1. Practice skills & care
- 2. Community medicine - individual & family, preventive medicine, (PH & epidemiology)
- 3. Medicine of age, specific groups
- 4. Internal Medicine
- 5. Practice management

FIG. 3 TRAINING PROGRAMME IN FAMILY MEDICINE (MAY 1990 - APR 1992)

Term	1	2	3	4	5	6	7	8	9	
From	MAY 90	AUG 90	NOV 90	FEB 90	MAY 91	AUG 91	NOV 91	FEB 92	MAY 92	AUG 92
To	JUL 90	OCT 90	JAN90	APR90	JUL 91	OCT 91	JAN 92	APR 92	JUL 92	
	HOSPITAL / POLYCLINIC ROTATING POSTINGS									MCGP
	FAMILY MEDICINE TEACHING PROGRAMME								Revision	Exam

- Notes
- | | | | |
|---|---|---|--|
| <p>HOSPITAL POSTINGS</p> <ul style="list-style-type: none"> * Medicine * Surgery | <p>5 compulsory</p> <ul style="list-style-type: none"> * Paediatrics * Obstetrics & Gynaecology * Community Health Services | <p>3 elective</p> <ul style="list-style-type: none"> * Orthopaedics * Skin | <ul style="list-style-type: none"> * Psychological Medicine * ENT * Eye |
|---|---|---|--|

FIG. 4A FAMILY MEDICINE TEACHING PROGRAMME MAY 90 - NOV 90
- once a week, on Saturday 2.30 - 5.30 PM

Term	1	2
Period	Jun 90 - Aug 90	Sep 90 - Nov 90
Submodule	1A PRACTICE SKILLS	2A THE CHILD & ADOLESCENT
Concepts of FM/Topics based on population groups	1 Briefing; FM - discipline & practice MCGP Examination 2 Consultation; earlier diagnosis 3 Counselling; problems of living	1 Common problems in childhood 2 Normal & abnormal devt; handicapped child 3 Problems of adolescent
4 sessions	4 Communication in general practice	4 Behavioural problems in child & Adolescent
Submodule	1B RESP & CVS DISORDERS	2B GASTROINTESTINAL DISORDERS
Topics based on systems	1 Acute resp problems in general practice 2 Chronic resp problems in general practice	1 Upper GIT problems in general practice 2 Lower GIT problems in general practice
3 sessions	3 Ischaemic heart disease	3 Jaundice in general practice
Submodule	1C PRACTICE MANAGEMENT	2C PRACTICE MANAGEMENT
*P, E, M-L 1 session	1C Medical record keeping Confidentiality of records	2C The GP's responsibility in notification, certification & dispensing

* P, E, M-L stands for practice, ethical, medico-legal topic

FIG. 4B FAMILY MEDICINE TEACHING PROGRAMME MAY 90 - NOV 90
- once a week, on Saturday 2.30 - 5.30 PM

Term	3	4
Period	Dec 90 - Feb 91	Mar 91 - May 91
Submodule	3A CONTINUING CARE; TERMINAL CARE	4A THE ELDERLY PATIENT
Concepts of FM/Topics based on population groups	1 Towards continuing care 2 Continuing care in hypertension 3 Continuing care in diabetes mellitus	1 Fitness in old age 2 Common problems in old age 3 The elderly infirm; domiciliary care
4 sessions	4 Terminal care	4 Rehabilitation in the elderly
Submodule	3B URINARY TRACT; BLOOD; ONCOLOGY	4B PSYCHOLOGICAL DISORDERS
Topics based on systems	1 Urinary tract problems in general practice 2 Blood disorders in general practice	1 Minor psychological disorders 2 Major psychiatric disorders
3 sessions	3 Oncology and general practice	3 The psychiatric patient in the community
Submodule	3C PRACTICE MANAGEMENT	4C PRACTICE MANAGEMENT
*P, E, M-L 1 session	3C Managing the practice - doctor as manager, clinic policies, appointment system	4C Computer use in the clinic' medical information system; GP research

* P, E, M-L stands for practice, ethical, medico-legal topic

FIG. 5A FAMILY MEDICINE TEACHING PROGRAMME JUN 91 - NOV 91
- once a week, on Saturday 2.30 - 5.30 PM

Term	5	6
Period	Jun 91 - Aug 91	Sep 91 - Nov 91
Submodule	5A COMMUNITY, FAMILY & PATIENT	6A THE ADULT PATIENT
Concepts of FM/Topics based on population groups	1 Human behaviour in health and illness 2 Belief systems in health & disease 3 The family in health and disease	1 Travel medicine 2 Harmful lifestyles 3 Occupational health
4 sessions	4 Preventive medicine; health screening, health promotion	4 Fitness to work; statutory examinations
Submodule	5B SIN DISEASES	6B RHEUMATIC, BONE & JT DISORDERS
Topics based on systems	1 Infective dermatoses 2 Acute non-infective dermatoses	1 Rheumatic problems in general practice 2 Emergency medicine & CPR; housecalls
3 sessions	3 Chronic non-infective dermatoses	3 Sports injuries
Submodule	5C PRACTICE MANAGEMENT	6C PRACTICE MANAGEMENT
*P, E, M-L 1 session	5C Practice issues - information/advertising, workload, contract, FFS, HMO, Insurance	6C Setting up practice - single vs partnership, location, clinic design, equipping the clinic

* P, E, M-L stands for practice, ethical, medico-legal topic

FIG. 5B FAMILY MEDICINE TEACHING PROGRAMME DEC 91 - MAY 92
- once a week, on Saturday 2.30 - 5.30 PM

Term	7	8
Period	Dec 91 - Feb 92	Mar 92 - May 92
Submodule	7A THE FEMALE PATIENT; STD	8A THE PREGNANT PATIENT
Concepts of FM/Topics based on population groups	1 Fertility - Family planning, Assisted reproduction 2 Common gynaecological problems 3 Gynaecological cancers	1 Antenatal care, Drug use in pregnancy 2 The at-risk pregnancy 3 Medical diseases and pregnancy
4 sessions	4 STD and AIDS	4 The Post-natal patient; Post-natal blues
Submodule	7B NEUROLOGY; EYE & ENT DISORDERS	8B ENDOCRINE & METABOLIC DIS; APPLIED NUTRITION
Topics based on systems	1 Neurological problems in general practice 2 The eye in general practice	1 Endocrine problems in general practice 2 Metabolic disorders in general practice
3 sessions	3 ENT problems	3 Nutritional counselling
Submodule	7C PRACTICE MANAGEMENT	8C PRACTICE MANAGEMENT
*P, E, M-L 1 session	7C Financial management - budgetary control, bookkeeping, statement of acct, balance sheet	8C Quality assurance self-audit, peer review

* P, E, M-L stands for practice, ethical, medico-legal topic

VOCATIONAL TRAINING IN THE UNITED STATES

Bauman S M, MD

The rationale for vocational training for family practitioners is the same throughout the world. The world needs well-trained medical generalists and this implies training beyond medical school. The generalist needs to be expert at common problems, at preventive medicine, at caring for the whole person over the whole life cycle. I would like to review briefly the United States experience in vocational training and comment on its relevance for South East Asia.

Until the 1990's, North Americans were cared for by health practitioners from a variety of educational backgrounds. Although a few were graduates of European universities or American schools patterned after them, the majority were graduates of inferior vocational training programs and many were alternative practitioners who recommended homeopathy or water cures. The Flexner report, issued early in the 1990's, ushered in a new era when medical education became the standard four-year doctorate program which follows a four-year baccalaureate degree. Until World War II, most health care in the US was provided by general practitioners whose post-doctoral training consisted only of a one-year rotating internship. But between then and the mid-1960's, the explosion of medical knowledge led to the proliferation of multiple medical subspecialties. By the late 1960's there existed a profound lack of primary health care in rural sections of the US. There was also a resurgence of interest in a holistic approach to the patient. Family Practice was created because of this felt need and in 1969 was granted medical specialty status. The American Board of Family Practice was empowered to grant board-certification to those individuals who successfully completed a three year post-doctoral residency program and then passed a national examination.

Paper delivered on 27 April 1990
Assistant Professor of Family Medicine
University of Medicine and Dentistry
New Jersey

Let us now examine the Family Practice residency training program. Consisting of three years, it is always sponsored by a hospital, whether a community hospital or one which is university-affiliated. The first year is similar to a rotating internship but with one-half day per week in the Family Health Center. The second year consists of advanced hospital rotations and three half-days in the FHC. The third year has five half-days in the FHC and allows for more individualized electives. The curriculum is based on the most common and/or life threatening diseases encountered in the US and the educational method is a combination of didactic pre-sentations and the apprenticeship of direct patient care both in the hospital and the FHC. An attempt is made for the resident to follow the same FHC patients over a three year period. Teaching is performed by family practice faculty - physicians, psychologists, dieticians, etc. - and by other medical specialists in the hospital. Funding is primarily from the sponsoring hospital, although this is supplemented by grants from the government and private foundations.

What are the advantages of this system? First, because it is analogous to other subspecialties, it has helped lead to greater acceptance of family practice by other specialties. Although family practice has lower pay and status than other fields of medicine, our rigorous training, certification, and every-seven-year recertification testing displays our concern with quality training. Second, the use of family practice faculty and the FHC (as opposed to individual preceptorships) give a consistency to training programs. Third, the system has proved itself successful by a twenty-year history of satisfied graduates who feel well-prepared and have had no difficulty obtaining hospital privileges.

The system is not without disadvantages. Many feel that our training programs are too analogous to those of other specialties. They argue that because the family practitioner's work is primarily outpatient, the training should have

less hospital responsibilities and more time in the FHC. It should be noted that an increasing number of internal medicine faculty are voicing the same sentiment. Second, the FHCs may not have a patient population which is relevant to the future work of the FP. Inner city hospitals tend to have FHCs with an overabundance of certain diseases such as AIDS which would be very dissimilar to a rural population for which the trainee is headed. Third, the current system is tied to hospital funding which has an uncertain future due to our national health insurance crisis. Fourth, although successful in quality, the system has been unsuccessful in producing the quantity of practitioners our nation needs. This problem however may be primarily due to deficiencies at the medical school level with an inadequate number of students interested in primary care being recruited and encouraged into our field.

In summary, family practice vocational training programs in the US have been successful in creating a viable and high quality branch of medicine. At this point, we need to reassess the relevance of our training programs and possibly increase the amount of time spent in the outpatient arena. We also need to reassess

our ties to hospitals and seek future funding in the public sector. We need to attract more students to our specialty and I will address this important issue in a second paper during these meetings.

What is the relevance of all this to Southeast Asia? Although attempts to gain prestige from our professional colleagues in the other specialties is understandable, we need to remember that our mandate is created by the health care needs of those we wish to serve. The goal in the US may be to place a Family Practitioner in each community. In a more rural, less developed nation it may be to develop Family Practitioners to lead public health teams or physician assistants. The point is that we need to assess the local needs, to assess our allies and funding sources, and to build political alliances. Finally, we need to reach students - the best program is worth nothing if its positions are not filled with trainees. We need to recruit at medical schools and before. We must influence the medical school admissions policy so that we insure that candidates will stay and work where needed.

WORKSHOP RECOMMENDATIONS ON STRATEGY ON VOCATIONAL TRAINING

Suchato R

From the plenary session and the workshop session, a set of 12 statements, 5 on the programme, 5 on trainer training and 2 on appropriate teaching methods have been collated and these are presented for adoption:

1. The vocational training programme in FM/GP should include not only theoretical teaching and hospital postings but also practice attachments.
2. Hospital postings are a necessity to develop the necessary core knowledge and practice skills but it is imperative that the trainee does not become captured by the narrow, fragmented specialist approach. A whole-person orientation should be emphasized by concurrent teaching by family medicine teachers, who should be prepared to get into the hospital to teach side-by-side with the hospital trained.
3. Practice attachments are necessary to accumulate working experience knowledge as opposed to theoretical knowledge. The actual length and timing will vary from programme to programme but the target of 1 year out of a 3 year programme should be spent in these attachment.
4. The theoretical teaching should be structured and varied in teaching approach. The trainee should be equipped to practise whole person, continuing and preventive care. He should be oriented to not only the individual but also the family as well as the diagnosis and solution of community problems.
5. The family doctor should continuously have a bridge with the hospital environment and technology after the completion of his hospital training.
6. Training the trainers (faculty development) should be a priority consideration. In this context, the inclusion of this topic in the agenda of the WONCA Asia Pacific Working party is a step in the right direction.
7. Teacher exchange, sharing of materials and methods should be actively encouraged. In this context WONCA can play co-ordinating and information dissemination roles, apart from being a depository of teacher training courses.
9. The academic teacher should be conversant not only with appropriate teaching methods but also research techniques, the philosophy of FM, and the development of theoretical frameworks from working experience knowledge.
10. Three fundamental issues important in the development of general practice teachers are 1. the confidence that they can teach and have something to teach, particularly, working experience knowledge as opposed to theoretical knowledge; 2. teaching methods appropriate to the clinic setting; and 3. the development of conceptual models from working experience knowledge.
11. It should be cautioned that in the faculty development, one should not fall into the trap of acquiring only hospital based techniques like ward rounds, lectures and double blind control trials.
12. Appropriate techniques to be developed in FM teaching include teaching, Balint type sessions, video tape in practice analysis, role play as well as skills based research.

*Workshop Recommendations
Bali, Jun 27 '90*

ARCALION

2 tablets with breakfast

Treatment of all forms of asthenia

Arcalion 200 is the only true antiasthenic agent suitable for all tired patients, and this is because Arcalion 200 presents 3 major advantages:

- its versatile efficacy,
- its rapid, clearly demonstrated action,
- its simple and practical dosage.

The uniquely versatile action of Arcalion ensures its efficacy in all forms of asthenia

By selectively binding to neuronal structures specifically related to fatigue, such as the reticular formation, Arcalion 200 acts on all of the manifestations of asthenia, regardless of the cause.

Arcalion is the treatment for all types of functional asthenia whether physical, psychological or intellectual.

The rapidity of action of Arcalion has been clearly demonstrated

in an international clinical dossier of more than 1,300 cases, including 354 cases studied under double-blind conditions versus a reference product.

The value of Arcalion has been demonstrated in the following specific indications:

- post-infectious asthenia,
- physical asthenia (asthenia in athletes),
- sexual asthenia,
- asthenia during the post-partum period,
- asthenia associated with colonic disorders,
- asthenia associated with slimming,
- rehabilitation of coronary patients,
- withdrawal in alcoholics and drug addicts,
- asthenia in students.

An additional practical advantage of Arcalion is its simple and practical dosage

- 2 tablets every morning with breakfast in the majority of patients,
- in the adult with severe asthenia Arcalion's excellent acceptability allows to repeat the dosage 2 to 3 times a day.

Arcalion may also be used without hesitation in "fragile" patients, during pregnancy, in children (1 tablet daily from the age of five years, 2 tablets daily from the age of ten years) as well as in elderly patients.

ARCALION²⁰⁰



Pharmacokinetics: Arcalion 200 is completely and rapidly absorbed. Peak plasma concentrations are attained after 45 minutes. The half life is 5 hours. Elimination starts after 2 hours; there is no accumulation. **Contraindication:** Hypersensitivity to subbutamine. **Overdosage:** In case of overdose, restlessness, euphoria and tremor may appear. These symptoms are transient and leave no sequelae. **General acceptability:** The therapeutic action of Arcalion 200 manifests progressively and there is no

stimulant effect. The action is sustained and increases with continuing treatment without development of dependence. The administration of Arcalion 200 is consistent with car driving and operating machinery. Laboratory results have remained normal in all clinical trials. Arcalion 200 can be combined with any other treatment. **Composition and presentation:** Arcalion has the following substance as its active principle: N,N'-[Dithiobis[2-(2-hydroxyethyl)-1-methylvinylene]]bis[N-(4-amino-2-methyl-5-pyrimidinyl)methyl]formamide]disobutyrate(ester) or subbutamine. Arcalion 200: box of 100 tabs, each containing 200 mg of the active substance.

For further information, please write to:
Les Laboratoires Servier.
Gidy, 45400 Fleury les-Aubrais
Correspondent:
Development International Servier.
24 rue du Pont, 92200 Neuilly Sur-Seine France

represented by
ASIAMED PHARMACEUTICAL PRODUCTS (S) PTE LTD
421, Tagore Avenue, Singapore 2676 Tel: 4596011
F.E. ZUELLIG (MALAYSIA) SDN. BHD.
11th Floor, Wisma Damansara, Jalan Semantan, Damansara Heights,
50706 Kuala Lumpur, Malaysia
Tel: 2553842

PREGNANCY IN WOMEN AGED 35 AND ABOVE

Phua S M, MBBS (Singapore) MRCOG (London)

SYNOPSIS

As more and more Singaporean women, (both primiparous and multiparous) embark upon pregnancy at an older age, there has been concern regarding its effect on the health of the mothers and quality of their off-springs.

This article aimed to examine the effects of maternal age on outcome of pregnancy. It was found that older women were more likely to suffer from hypertension and diabetes during pregnancy. However obstetric performance and perinatal outcome did not show significant difference except for a higher incidence of caesarean section in the older women.

INTRODUCTION

Delayed child-bearing is becoming increasingly common in many developed countries and even in some developing countries. The total number of women who are 35 to 40 years of age in the United States is projected to increase 42% and the percent births to this age group is projected to increase 37% (Gindoff PR and Jewelewica R 1986). This is apparently because of a trend to postpone child-bearing and first birth due to women's career priorities, advanced education, control over fertility, financial concerns, late and second marriages, and infertility. With the encouragement by the Singapore Government for more child births in the better educated women, more older women may embark on pregnancy than before.

There is general assumptions by lay-people, as well as doctors, that higher maternal age is associated with more complicated pregnancy and unfavourable outcome. In the present age of comprehensive antenatal care, pre-natal diagnosis, intra-partum electronic monitoring and abundance of trained obstetricians, these assumptions have to be re-examined.

Registrar

Department of Gynaecological, Oncology and Urology
Kandang Kerbau Hospital

In this brief study, the effects of maternal age on pregnancy is examined. Pregnancy outcome is divided into 1) medical complications in pregnancy 2) obstetrical complications and 3) perinatal outcome.

METHODS

Clinical data of all obstetric patients delivered at Toa Payoh Hospital were computerised since 1988. There were a total of 3373 deliveries at Toa Payoh Hospital in 1988. These were divided into multiparous <35, multiparous ≥ 35, primiparous <35 and primiparous ≥ 35 year old. Informations with regard to medical complications, obstetrical complications and neonatal outcome were retrieved through the computer.

RESULTS

TABLE 1 RACIAL BREAKDOWN AMONG MULTIPAROUS

	a) Multip <35	b) Multip ≥ 35	c) % b/a
Chinese	1224	242	16.5
Malay	657	119	15.3
Indian	119	16	11.9
Others	26	3	10.3
Total	2026	380	15.8

The differences between the percentages of older multiparous among the various races are not statistically significant.

TABLE 2 RACIAL BREAKDOWN AMONG PRIMIPAROUS

	a) primip <35	b) primip ≥ 35	c) % b/a
Chinese	573	33	5.4
Malay	257	10	3.7
Indian	70	2	2.8
Others	22	0	0
Total	922	45	4.7

The differences between the percentages of older primiparous among the various races are not statistically significant.

TABLE 3 MEDICAL COMPLICATIONS						
	M < 35	M > 35	diff (M)	P < 35	P > 35	diff (P)
Hypertension	6.2%	13.4%	p < 0.05	8.1%	28.9%	p < 0.01
Diabetes	2.7	5.0	p < 0.05	1.9	2.2	NS
Thyrotoxicosis	0.7	1.8	NS	0.5	0	p < 0.05
Cardiac Disease	0.3	0	p < 0.01	0.7	0	p < 0.01
Renal Disease	0	0	NS	0.3	0	p < 0.05
Anaemia (Hb < 11 gm)	27.8	27.1	NS	29.1	26.7	NS

M = multiparous women

P = primiparous women

TABLE 4 OBSTETRICAL COMPLICATIONS						
	M < 35	M > 35	diff (M)	P < 35	P > 35	diff (P)
Malpresent	3.3%	3.4%	NS	5.0%	6.7%	NS
Twin	0.9	0.5	NS	0.2	0	NS
Preterm Delivery	8.4	9.7	NS	11.1	4.4	NS
Post-term	1.9	1.3	NS	2.0	0	NS
Prolonged labour (> 12 hours)	7.3	5.8	NS	15.3	13.3	NS
Induction	7.4	7.8	NS	8.5	6.7	NS
Forceps Delivery	2.6	3.4	NS	17.0	17.8	NS
Caesarean	12.3	20.8	p < 0.01	17.7	48.9	p < 0.01
MRP	3.9	6.6	p < 0.05	4.0	2.2	NS
3 deg tear	0.05	0	NS	0.1	0	NS
Postpartum sepsis	1.0	1.6	NS	2.2	2.2	NS

MRP = manual removal of placenta

PPH = post-partum haemorrhage

TABLE 5 PERINATAL OUTCOME						
	M < 35	M > 35	diff (M)	P < 35	P > 35	diff (P)
Low Birth Wt (< 2.5 kg)	4.9%	6.6%	NS	9.9%	6.6%	NS
Apgar < 8 at 5 mins	1.6	3.2	NS	3.5	4.5	NS
IUGR	1.0	1.6	NS	1.4	2.2	NS
Congenital Malformation	1.1	1.3	NS	1.7	4.4	NS
Stillbirth	0.7	1.0	NS	1.3	0.5	NS

IUGR = Intrauterine growth retardation

COMMENTS

Of the total of 3373 deliveries at Toa Payoh Hospital in 1988, 2406 (71.3%) were multiparous and 967 (28.7%) were primiparous. 380 or 15.8% of the multiparous women were >35 year old compared with 45 or 4.7% in the primiparous.

Overall a total of 425 or 12.6% of the total deliveries were in women >35 year old. Therefore in our population there was a considerable proportion of deliveries in the older women. Of the 425 women, 380 (89.4%) are multiparous and 45 (10.6%) were primiparous. Most of the deliveries in the older women occurred in the multiparous.

The Chinese had the highest percentage of deliveries in the older women (both multiparous and primiparous), compared to the other races. The differences however were not statistically significant.

Older women were more likely to suffer from hypertension and diabetes mellitus during pregnancy, compared to the younger women. The incidence of hypertension in the older multiparous was 13.4% compared to 6.2% in the younger women ($p < 0.05$). Among the primiparous the difference was given greater, 28.9% in the older women compared to 8.0% in the younger women ($p < 0.01$). The incidence of diabetes mellitus in the older multiparous was 5.0% compared to 2.7% in the younger women ($p < 0.05$). The incidence of diabetes mellitus in the older primiparous women was (2.2% compared to 1.9%). This however is not statistically significant. These findings were consistent with several similar studies (Lehmann DK and Chism J 1987, (Brassil MJ et al 1987), (Hansen JP 1986) and (Yasin SY and Beydoun SN 1988).

In this study, younger multiparous and primiparous women were more likely to suffer from cardiac disease compared to the older women. The possible explanation was that patients with cardiac disease tend to embark on pregnancy while they were young and refrained from getting pregnant when they are older. Similarly more younger primiparous suffered from thyrotoxicosis and renal diseases. The incidence of anaemia did not show any significant difference between older and younger women.

Results from this study did not show any significant differences in the incidence of malpresentation, multiple pregnancies, pre-term and post-term deliveries, induction and prolong labour, between older and younger women. A review of several studies however showed conflicting results.

Lehmann and Chism (1987) showed that premature labour, precipitate labour and malpresentation were significantly more common in women above the age of 40. Brassil et al (1987), showed no increase in obstetric complications except for a higher incidence of induction. Other studies showed no increase in obstetric complications (Kirz DS, Dorchester W and Freeman RK 1985), (Radivojevic K and Rudelstorfer R 1988) and (Yasin SY and Beydoun SN 1988).

The incidence of forceps deliveries were much higher in the primiparous compared to the multiparous. However the incidence of forceps deliveries did not show any significant difference between the older and the younger women.

Caesarean section rate was significantly higher in the older women. In the multiparous, the incidence was 20.8% in the older women and 12.3% in the younger women ($p < 0.01$). In the primiparous the incidence was 48.9% in the older women and 17.7% in the younger women ($p < 0.01$). Radivojevic and Rudelstorfer (1988), showed an increase of section rate from 11.5% to 39% in primigravidae more than or equal to 35 years. Similarly other studies also showed a significantly higher incidence of Caesarean section (Martel M et al 1987, Yasin SY and Beydoun SN 1988). The higher incidence of hypertension and diabetes may account for some of the indications for Caesarean section in the older women. Other factors that may account for higher Caesarean section rate in the older women include, higher incidence of infertility in older women and the fact that many of these pregnancies were considered to be precious. The incidence of manual removal of placenta was higher in the older multiparous (6.6%) compared to (3.9%) in the younger multiparous ($p < 0.05$). The older multiparous were more likely to be of higher parity and are therefore more likely to suffer from injuries to the uterine cavity as a result of previous deliveries or gynaecological procedures. This may

predispose to higher incidence of placenta adhesion. Multiparity rather than age was probably the predisposing cause to a higher incidence of manual removal of placenta.

In this study there was no significant difference in perinatal outcome between older and younger women in both multiparous and younger women in both multiparous and primiparous groups. Incidence of low birth weight, low Apgar I/URG stillbirth, did not show significant differences. The incidence of congenital abnormality appeared to be slightly higher in the older women especially in the primiparous. However this difference was not statistically significant.

Forman MR et al (1984), showed that the relative risk of late fetal deaths was significantly greater among those aged 35 through 39 years, compared with women aged 20 to 24. Lehmann DK and Chism J (1987), showed that the incidence of stillbirth, perinatal mortality, and abnormal birth weight was significantly increased in women aged 40 and above. Brassil MJ et al (1987), however showed that after correction for congenital malformations, the perinatal mortality rate was not increased in women aged 40 and above. Ultimately perinatal outcome depends on the standard of antenatal, intrapartum and neonatal care. With the availability of facilities for prenatal diagnosis, such as chorionic villi sampling, amniocentesis and high resolution ultra-sound, the incidence of congenital abnormality in the older women can also be reduced.

CONCLUSIONS

12.6% of our deliveries occur in women aged 35 and above. This percentage is likely to increase in the future. Older women are more likely to suffer from hypertension and diabetes during pregnancy. However obstetric performance and perinatal outcome did not show sig-

nificant difference between younger and older women, except a higher incidence of caesarean section in the older women. Further study is recommended to examine the cause of the higher caesarean section rate in the older women. In general women should be encouraged to start their child-bearing early, however older women should not be discouraged. With improvement in obstetric management, such as comprehensive antenatal care, prenatal diagnosis of fetal abnormality, electronic and ultra-sonic monitoring of fetal wellbeing, outcome of pregnancy in the older women had improved tremendously.

REFERENCES

1. Brassil MJ et al (1987): Obstetric outcome in first-time mothers aged 40 and over. *Eur J Obstet Gynecol Reprod Biol* 1987 Jun, 25(20): p 115-20.
2. Forman MR et al (1984): Delayed childbearing in Sweden, *JAMA (KFR)* 1984 Dec 14, 252 (22): p 3135-9.
3. Gindoff PR and Jewelewicz R (1986): Reproductive potential in the older women. *Fertil Steril (EVF)* 1986 Dec, 46(6): p 989-1001.
4. Hansen JP (1986): Older maternal age and pregnancy outcome: a review of the literature. *Obstet Gynecol Surv (OCN)* 1986 Nov, 41(11): p 726-42.
5. Kirz DS, Dorchester W and Freeman RK (1985): Advanced maternal age: the mature gravida. *Am J Obstet Gynecol (3NI)* 1985 May 1, 152(1): p 7-12.
6. Lehmann DK and Chism J (1987): Pregnancy outcome in medically complicated and uncomplicated patients aged 40 or older. *Am J Obstet Gynecol (3NI)* 1987 Sep, 157(3): p 738-42.
7. Martel M et al (1987): Maternal age and primary caesarean section rates: a multivariate analysis. *Am J Obstet Gynecol (3NI)* 1987 Feb, 156(2): p 305-8.
8. Radivojevic K and Rudelstorfer R (1988): The older primipara: Labour induction and rigidity of the soft tissues. *Geburtshilfe Frauenheilkd (FK5)* 1988 Apr, 48(4): p 246-8.
9. Yasin SY and Beydoun SN (1988): Pregnancy outcome at greater than or equal to 20 weeks' gestation in women in their 40s. A case-control study. *J Reprod Med (JWT)* 1988 Feb, 33(2): p 209-13.

OPTIMIZING SUBCUTANEOUS INSULIN INJECTIONS

Tan K T, MBBS, M Med, MRCP (UK)

SUMMARY

Subcutaneous insulin injection has remained the major mode of insulin delivery for diabetic patients since the discovery of insulin. Subcutaneous insulin injections are subject to problems of variable absorption as well as various reactions to insulin injections. Ways of overcoming these problems must be considered to optimize insulin delivery.

INTRODUCTION

Insulin injection was first employed in the treatment of diabetes in 1922.¹ Since then, great strides have been made in insulin treatment of diabetes. Longer acting insulins and purer forms of animal-derived insulins have been introduced. The advent of human insulin was another recent milestone. Throughout the 68 years that insulin has been used, the major mode of delivery has been through subcutaneous injections. Single or multiple daily injections of insulin is the way of life for the vast majority of Type 1 diabetics as well as a significant proportion of Type 2 diabetics. Other modes of delivery of insulin including the use of jet injectors, the artificial pancreas and nasal insulin are at present still at a research level though the jet injector and nasal insulin could prove interesting possibilities for the future.^{2,3,4} Until these methods become well accepted for clinical practice, subcutaneous insulin injections will remain the routine way of insulin delivery.

Subcutaneous insulin injection is complicated by a number of problems. These are mainly related to the absorption problem of subcutaneous insulin and the reactions to insulin injections. Optimum delivery of insulin must therefore take into account these problems and the ways to overcome them.

Senior Registrar
Department of Medicine I
Singapore General Hospital

PROBLEMS OF SUBCUTANEOUS INSULIN INJECTIONS

a. Problems of absorption of insulin

The delivery of insulin via the subcutaneous route is not an ideal one. In the normal person, insulin is released from the pancreas and enters the systemic circulation via the portal system. In practice, this 'physiological' way of delivering insulin cannot be achieved apart from delivering insulin into the peritoneum as can be adopted for patients on peritoneal dialysis.

Apart from its 'non-physiological' route of entry, subcutaneous insulin injection also suffers from a high degree of variability in absorption. Intra-individual variability in absorption can be as high as 35%.⁵ A large number of factors affect the absorption of insulin. Some important factors are the type of insulin, site of injection, depth of injection, exercise, local massage, temperature changes, etc.

The type of insulin and volume of injection can alter the rate of absorption. Within the same individual, this is usually not a problem as the dose and type of insulin is usually unchanged. Long acting insulins tend to be more slowly and variably absorbed as compared to soluble or short acting insulin. The mixture of short and intermediate acting insulin can also alter the absorption profile. In particular this could be a problem with mixing zinc preparations (e.g. lente) with soluble insulin. The use of protamins preparations (e.g. NPH insulin) with soluble insulin results in less variation.⁶ The problem may also arise if a patient is switched to another species or preparation of insulin either intentionally or accidentally. Human insulin is absorbed more quickly than animal-derived insulins.

The commonly used sites for insulin injections are the arms (deltoid region), the upper lateral part of thighs, the lower abdomen and buttocks. Patients are asked to rotate the

sites of injection and avoid injecting in the same area repeatedly. However, the rates of absorption can vary considerably. Absorption is fastest from the abdomen, followed by the arms, legs and lastly buttocks.^{7,8} Absorption from the abdomen can be as much as 86% faster than the leg and 30% faster than from the arm.⁷ Exercise increases the absorption especially in the arms and legs. Massage of the injected area and increase in temperature also can accelerate absorption of insulin.

The depth of injection is a subject of some confusion to patients. Patients are often concerned about the differences in the recommended angle of injection. With the advent of disposable syringes with attached needles, it is often recommended that a 90 degree or perpendicular injection of the whole needle be adopted. This standardises the absolute depth of injection but does not ensure that the injection is into the subcutaneous fat. Inadvertent intramuscular injections which leads to faster absorption can occur especially in lean patients who inject into the arm or thigh. Within the same individual, the subcutaneous fat layer can be of variable thickness in the thighs and may be insufficiently thick especially in the lateral aspect where injections are given.¹⁹

b. Adverse effects of insulin injections

There are a number of possible adverse reactions to insulin injections. The most common of these is hypoglycaemia. This problem is a very large one and is outside the scope of this discussion. I will instead concentrate on a number of other problems that are perhaps less well recognised. These include lipodystrophy, insulin antibody formation and insulin allergy. A few others like local pain, bruising and infections can usually be reduced by attention to asepsis and injection technique.

Lipodystrophy

Lipodystrophy can take the form of either lipohypertrophy or lipoatrophy. This can sometimes result in quite severe disfigurement at the sites of injection. The exact frequency of this complication is unknown. It was previously estimated that 50% of children, 20% of adult female and 5% of adult male on long-term insulin injections will develop this problem.¹⁰ With the introduction of purer forms of insulin,

this complication is expected to occur less frequently.

Both lipohypertrophy and lipoatrophy tend to occur when insulin is repeatedly injected in the same area. Both resolve spontaneously with time if injection in the affected area is avoided. Lipoatrophy may also be treated by injecting a purer form of insulin into the depth of wall of the affected area. This may hasten the recovery. The use of highly purified pork insulin or human insulin can reduce the frequency of lipoatrophy.

Insulin Antibodies

The formation of insulin antibodies in reaction to long-term insulin injection is a common finding though its exact clinical significance is seldom explored. The problem is also compounded by the fact that insulin antibody may exist in Type 1 diabetic prior to introduction of insulin therapy.

The prevalence of insulin antibody amongst insulin treated patients is high - in excess of 50%. Up to 95% of patients treated with conventional bovine-porcine insulin develop insulin antibodies.¹¹ Treatment with highly purified porcine insulin alone results in a prevalence of 50-60%.¹² This can be further reduced to 44% in patients treated exclusively with human insulin.¹³

There are a number of potential clinical problems that can result from the development of insulin antibodies. These include the development of lipoatrophy, poor glycaemic control from altered insulin pharmacokinetics, insulin resistance and complications of pregnancy. The severity of the problem is dependent on the titre of antibody. In clinical practice, the insulin antibody (much less its titre) is seldom tested. Nevertheless, it has been shown that the insulin absorption curve loses its peak and tends to rise more slowly in correlation to the antibody titre.¹⁴ This can result in higher postprandial blood glucose levels. Severe insulin resistance (often taken as insulin requirement exceeding 200 units per day) is seldom caused by insulin antibody. This is estimated at less than 0.1%.¹⁵ Insulin antibody of the Ig G type can potentially cross the placenta and may interfere with glucose metabolism in the neonate by either causing hyperglycaemia or hypoglycaemia. There is some evidence that this risk is increased but reports on the frequency of this problem are limited at

present.^{16,17}

Insulin Allergy

Insulin allergy varies in type and severity. It ranges from local reactions like redness, swelling, induration and itching, to systemic reactions like generalised urticaria, angioedema and even anaphylaxis. Allergic reactions usually occur within 15 minutes to 2 hours after the injection of insulin. Mild local reactions usually require no treatment and resolve with continuation of insulin therapy. Occasionally the use of antihistamine for a short period may help to tide the patient over the allergic reaction. Occasionally a change to highly purified or human insulin may also help. Systemic allergic reactions are fortunately rare and anaphylaxis, which is the most dangerous, is fortunately the least common. These reactions are treated by putting the patient on a desensitisation regime. This is performed by giving the patient repeated injections of gradually increasing dose of insulin starting with a very small dose of diluted insulin.¹⁰

Optimizing Subcutaneous Insulin Injection

Optimal result from subcutaneous insulin injections can be achieved by considering ways to overcome the problems mentioned above. The following recommendations can be made:

1. Each patient must be taught to standardise his/her injection techniques and keep to the same regime each day. Injection on the abdomen is generally preferred over the arm or leg.
2. Systematic rotation of injection sites should be practised and a recommended rule is that an area of 3 cm in diameter (slightly bigger than a fifty-cent coin) should receive insulin only once in 3 to 4 weeks.¹⁰
3. The use of highly purified porcine insulin or human insulin may be recommended for newly diagnosed patients or those receiving insulin for the first time. In fact there are a number of theoretical advantages that suggest that human insulin may be favoured over highly purified porcine insulin.
4. A switch to purer insulin or human insulin can be considered for patients who, on conventional insulin, develop problems with insulin injection. There is otherwise little reason to change patients who are well controlled on conventional insulins to highly purified or human insulins.

Finally, it must be recognised that some of the problems of subcutaneous insulin injection are inherent in the method of insulin delivery and are unavoidable. Nevertheless many of the other problems mentioned above can be reduced by attention to details and constant vigilance for problems that may arise.

REFERENCES

1. Best CH. The first clinical use of insulin. *Diabetes* 1956; 5: 65-7.
2. Task force on jet injectors. Jet injectors. *Diabetes Care* 1990; 13 (Supp 1): 39-40.
3. Friedman EA. Towards a hybrid artificial pancreas. *Diabetes Care* 1989; 12: 415-20.
4. Salzman R, Manson JE, Griffing GT et al. Intranasal aerosolized insulin. Mixed meal studies and long term use in Type 1 diabetes. *N Engl J Med* 1985; 312: 1078.
5. Binder C, Lauritzen T, Faber O, Pramming S. Insulin pharmacokinetics. *Diabetes Care* 1984; 7: 188-9.
6. Heine RJ, Bilo HJG, Fonk T, Van der Veen EA, Van der Meer J. Absorption kinetics and action profiles of mixtures of short and intermediate acting insulins. *Diabetologia* 1984; 27: 558-62.
7. Galloway JA, Spradlin CT, Nelson RL, Wentworth SM, Davidson JA, Swarner JL. Factors influencing the absorption, serum insulin concentration and blood glucose response after injections of regular insulin and various insulin mixtures. *Diabetes Care* 1981; 4: 366-76.
8. Koivisto VA, Felig P. Alterations in insulin absorption and in blood glucose control associated with varying insulin injection sites in diabetic patients. *Ann Intern Med* 1980; 96: 59-61.
9. Frid A, Linden B. Where do lean diabetics inject their insulin? A study of computed tomography. *Br Med J* 1986; 292:1638.
10. Marble A. Insulin in the treatment of diabetes. In Marble A, Krall LP, Bradley RF, Christliedo Ar, Soeldner JS (eds). *Joslin's diabetes mellitus*, 12th edition. Lea & Febiger, Philadelphia 1985 p380-405.
11. Asplin CM, Hollander P, pecoraro RE, Brodsky J, Palmer JP. Insulin, pancreatic polypeptide and glucagon antibodies in insulin-dependent diabetes mellitus. *Diabetes Care* 1981; 4: 337-42.
12. Czyzyk A, Lawecki J, Rogala H, Miedzinski E, Popik-Hankiewicz A. Serum levels of insulin-binding antibodies in diabetic patients treated with mono-component insulin. *Diabetologia* 1974; 10: 233-6.
13. Fineberg SF, Galloway JA, Fineberg NS, Ratabun MJ, Huffererd S. Immunogenicity of recombinant DNA human insulin. *Diabetologia* 1983; 25: 465-9.
14. Van Haefst TW, Bolli GB, Dimitriadis GA, Gottesman I, Horwitz D, Gerich JE. Effect of insulin antibodies and their kinetic characteristics on plasma free insulin dynamics in patients with diabetes mellitus. *Metabolism* 1986; 35: 649-56.
15. Shipp JC, Cunningham RW, Russell RO, Marble A. Insulin resistance: clinical features, natural course

- and effects of adrenal steroid treatment. *Medicine* 1965; 44: 1665-9.
16. Heding LG, Persson B, Stangenberg M. Beta cell function in newborn infants of diabetic mothers. *Diabetologia* 1980; 11: 427-32.
17. Van Haefen TW. Clinical significance of insulin antibodies in insulin treated diabetic patients. *Diabetes Care* 1989; 12: 641-8.

THE MANAGEMENT OF SYMPTOMATIC HAEMORRHOIDAL DISEASE

Seow C, MBBS FRCSE

INTRODUCTION

Haemorrhoidal plexuses are normally found in all individuals. These are composed of the internal and external haemorrhoidal plexuses of the anal canal. It had been recently shown that these plexuses are important in the fine tuning of anal continence and anal luminal sampling. These so-called anal cushions swell in response to physiological and pathological processes within the anal canal due to the presence of arterio-venous channels. They are therefore erectile tissue.

ETIOLOGY

Haemorrhoids are not varicose veins caused by portal hypertension. This old theory has been discarded. A multifactorial etiology may perhaps best explain their presence and symptoms. Haemorrhoids have been noted to have a familial tendency. In affected families, many members of the family develop symptomatic piles often at an early age. Piles are unique to the human race, the erect posture has been said to have a part in their causation, albeit a small part. Poor dietary habits consisting of a low fibre diet as well as improper toilet habits with chronic straining at stool and constipation have also been implicated. Chronic straining results in a shearing force on the anal cushions. With time, these cushions prolapse due to a weakening of the surrounding supporting stroma. Increased intraabdominal pressure e.g. in pregnancy, or in association with inappropriate anal sphincter contraction may result in venous congestion and expose these

haemorrhoidal plexuses to a greater than normal shearing force. Symptoms are then caused when there is abnormal dilatation of the internal haemorrhoidal plexuses or when there is abnormal distension of the arterio-venous channels in the anal cushions which may then bleed or prolapse.

SYMPTOMATOLOGY

As the anal cushions are normal tissues, most people with visible haemorrhoidal vessels within the anal canal are asymptomatic. They do not therefore need treatment. Haemorrhoids should only be treated after other more sinister causes of rectal bleeding or swelling have been excluded.

Haemorrhoids should only be treated if they are symptomatic. The commonest problem is bleeding. This bleeding may be profuse and result in severe anaemia. Patients often complain of blood dripping like a tap after motion. More commonly, the bleeding manifests as staining on the tissue paper after defecation. The blood is classically bright red. This is due to the arterio-venous channels in the anal haemorrhoidal plexuses. Soiling and pruritis ani are also common. Prolapse or complaints of a lump at the anus is another common feature. The classification of prolapsing piles is well known. First degree piles do not prolapse, but they are clearly visible on proctoscopy. Second degree piles prolapse but reduce spontaneously. Third degree piles prolapse but then require manual reduction. Chronic prolapse often results in pulsion polyps and skin tags. These in themselves may cause symptoms and difficulties in maintaining anal hygiene. Prolapsed haemorrhoids may occasionally swell dramatically or become thrombosed or even gangrenous. These are sometimes called fourth degree piles. Pain is then a constant feature. Other terms that may sometimes be confusing are internal piles and external piles. These refer to the anatomical internal and external haemorrhoidal plexuses respectively and not to the degree of pile prolapsed.

Senior Registrar
Department of Colorectal Surgery
Singapore General Hospital
Outram Road

Currently: Research Fellow & Clinical Assistant
St Mark's Hospital for diseases of the Rectum and Colon
City Road
London EC1V 2PS

MANAGEMENT

Treatment of piles depend on both the type of symptom and the degree of associated prolapse.

Dietary Fibre and Toilet Reeducation

A detailed history of the patient's dietary and toilet habits may be illuminating. Straining at stool is very common and must be avoided. Reading on the bowl results in ineffectual chronic straining and should be stopped. A high fibre diet or supplementary fibre is important to prevent constipation. Patients on high supplementary fibre should be reminded to maintain a high fluid intake as these fibre will otherwise cause hard concretions which will be contrary to good motions. In this respect isphaghula husks or sterculia are often helpful. Local ointments or suppositories may be soothing and ease difficult stool passage.

Injection Sclerotherapy

Injection therapy has been practised since the 1860's. It is suitable for bleeding first or second degree piles. A sclerosant agent, usually 5% phenol in arachis or almond oil is used. 2-8 mls may be injected into the submucosal tissue above the pedicle of the pile. Intravascular injection is not recommended. The sclerosant constricts the vessels by perivascular fibrosis and increases fixity of the anal cushions to the underlying tissues and therefore hitches up prolapsed piles. Recent studies have not shown superiority of injection therapy over dietary fibre. Nevertheless, it is a very useful method of stopping troublesome acute haemorrhoidal bleeding. Injection sclerotherapy should be avoided in severe perianal dermatitis, chronic diarrhoea, Crohn's disease or in the immunocompromised, as severe infection may result. Inadvertent prostatic injection causes immediate penile tumescence, pain and haematuria. This must be taken seriously as life threatening septicaemia has been reported.

Rubber Band Ligation

Barron developed his ligator in 1963. The technique was however originally described by Blaisdell in 1958. Banding is probably superior to injection sclerotherapy, especially for symptomatic second degree piles. Bands should not be placed on the piles but on the redundant mucosa above the piles. The haemorrhoidal mass is thus drawn upwards. If properly done all 3

piles can with safety be banded at the same sitting without stricture formation. Repeated banding may be necessary! Wrongly applied bands catching the sensitive anodermal skin result in immediate and severe pain. Immediate removal of that band is mandatory. 5% of patients may experience a pain that starts several hours later. This pain typically lasts for several days. It is due to vascular thrombosis spreading to affect the vessels to the sensitive perianal skin. Analgesics like panadol are often effective. Patients should also be warned of mild bleeding which may occur in 5-7 days when the pile necroses and the band falls away. Bleeding is usually mild but occasionally may be severe. Rarely, patients complain of tenesmus. Sepsis is not common but fever, associated with pain and urinary difficulties must be taken seriously, especially in immunocompromised patients.

Cryotherapy

This procedure has largely fallen out of favour. Treatment is time consuming and the results are poor.

Infrared coagulation, Photocoagulation, Galvanic generator and probe

These expensive modalities of treatment have not been proven to be superior to injection or dietary adjustments!

Anal Dilatation

Maximal anal dilatation is mentioned only to be condemned. Results are poor in so far as many patients develop subsequent incontinence to liquid stool and flatus.

Lateral Anal Sphincterotomy

This is based on the same theory as anal dilatation, in which the inappropriate anal sphincter contraction is relaxed. Lateral sphincterotomy is a more controlled procedure and results in less incontinence. It's routine usage in haemorrhoids requires further research.

Formal Haemorrhoidectomy

Excision of haemorrhoidal tissues may be necessary for symptomatic piles unresponsive to more conservative treatment or for severe fourth degree piles. Various techniques are currently being used.

1. Excision and ligation. This is popularly known as the St Mark's or the Milligan Morgan Haemorrhoidectomy. All 3 primary

piles are dissected to the anorectal ring. The pedicle is ligated and the excess piles excised. The wound is left open to heal. Adequate skin bridges of at least 1 cm wide prevent anal stricturing. Careful separation of the internal anal sphincter is important in preventing severe post operative pain. Various modifications to this technique include clamping and cautery, clamping and suturing, excision of only one pile and laser excision.

2. Submucosal Haemorrhoidectomy. This is a rather more difficult and bloody procedure and is not widely used.
3. Closed Haemorrhoidectomy. This technique is not popular outside of the USA. The piles are dissected as in the excision and ligation method. The wound edges are however approximated. A higher stricture rate has been reported. Post operative pain has not been significantly reduced.
4. Radical haemorrhoidectomy. This is also known as the Whitehead operation. This radical procedure removes all haemorrhoidal tissues including primary and secondary piles. Recurrences are very low and ectropion of the anal mucosa with mucous discharge and irritation should be rare if properly done. Improper surgery results in the Whitehead deformity ie. anal ectropion, rectal mucosa prolapse, incontinence, pruritis ani and stricture formation.

Post Haemorrhoidectomy outpatient care

Pain need not be a prominent feature of the post haemorrhoidectomy patient. Proper surgery is of course important. Adequate oral and topical analgesics are essential for a smooth bowel action. High dietary fibre, stool softener and a laxative combine to ensure a good and

easy motion. Dressings are not necessary, especially after discharge from the hospital.

ACKNOWLEDGEMENT

The author wishes to thank Ms Judith Landgrebe for her excellent editorial assistance.

REFERENCES

1. Gartell PC, Sheridan RJ, McGinn (1985) Outpatient Treatment of haemorrhoids: a randomized clinical trial to compare rubber band ligation with phenol injection. *Br J Sur* (72): 478-479.
2. Murie JA, Sim AJW, Mackenzie (1982) Rubber band ligation versus haemorrhoidectomy for prolapsing haemorrhoid: a long term prospective clinical trial. *Br J Sur* (69): 536-538.
3. DeRoove DMLR, Hoofwijk AGM, van vroomhoven ThJMV (1989) Lateral internal sphincterotomy in the treatment of fourth degree haemorrhoids. *Br J Sur* (76): 1181-1183.
4. Tinckler LF, Baratham G (1964) Immediate haemorrhoidectomy for prolapsed piles *Lancet* (ii): 1145-1146.
5. Senapati A, Nicholls RJ (1988) A randomized trial to compare the results of injection sclerotherapy with a bulk laxative alone in the treatment of bleeding haemorrhoids. *Int J Colorect Dis* (3): 124-125.
6. Wechter DG, Luna Gk (1987) An unusual complication of rubber band ligation of Haemorrhoid. *Dis Col Rect* (30): 137-140.
7. Mortensen PE, Olsen J, Pedersen IK, Christensen J (1987) A randomized study on haemorrhoidectomy combined with anal dilatation. *Dis Col Rect* (30): 755-757.
8. Poon GP et al (1986) Conventional vs Triple Rubber Band ligation for haemorrhoids *Dis Col Rect* (29) 836-838.
9. Gibbons CP, Bannister JJ, Read NW (1988) Role of constipation and anal hypertonia in the pathogenesis of haemorrhoids. *Br J Sur* (75): 656-660.



*Give her your competent advice
and the extra reassurance
of a fast, reliable pregnancy test,
so easy to be carried out
in your own office.*

Just dip EVENT test[®] strip hCG

into the sample, leave it there for 5 minutes

& read the result



The first one-step pregnancy test strip

- GAIA[®] test strip technology
- One-step procedure - dip&read
- Results in 5 minutes
- Sensitivity: 150 I.U./l,
early detection
from the first day
of the missed period
- Built in control
for extra reassurance
- Over 99% accurate
- Stable results
- Storage at room temperature



20 TEST PACK

**from BOEHRINGER MANNHEIM
your partner
in diagnosis & therapy.**

**BOEHRINGER
MANNHEIM**



HOME STUDY SECTION

USE OF DRUGS IN THE ELDERLY

Omar B S T, MBBS (S'pore), MCGP (S'pore), FRACGP

INTRODUCTION

Appropriate and rational use of drugs in the elderly is a matter of growing medical and social concern. An increasing interest in the therapeutics of old age has resulted from the recognition that differences in drug handling and response occur as a consequence of both normal and pathological ageing. The elderly not only receive a disproportionate share of prescribed medication but also suffer an unfortunate high incidence of iatrogenic morbidity. The elderly are especially sensitive to the intended pharmacologic effects of drugs and their undesirable adverse reactions. It appears there are two major mechanisms which account for altered drug effects in the elderly. These are changes in pharmacokinetics or pharmacodynamics (or both) with ageing.

PHARMACOKINETICS

Pharmacokinetic changes are partly predictable from physiological perturbations associated with the ageing process.

ABSORPTION

Age related changes in upper gastrointestinal function (achlorhydria, changes in motility or diminished blood flow) may modify absorption. However, these effects have not yet been shown to have clinical significance.

DISTRIBUTION

In the elderly there is considerable increase in the ratio of adipose to lean tissue, while total body weight tends to decrease. In addition, there is a decrease in serum albumin concentration. These changes would be expected to result in an increased volume of distribution

of many lipophilic and extensively protein-bound drugs and the evidence supports this: benzodiazepines, phenothiazines, sulphonylureas, propranolol, phenytoin and chlormethiazole have all been shown to have an increased volume of distribution in the elderly. Conversely, the volume of distribution decreases with age for hydrophilic drugs such as paracetamol, atenolol and ethanol.

METABOLISM

Hepatic blood flow decreases with age and this contributed to the reduced clearance of drugs which undergo extensive "first-pass" metabolism (eg. propranolol, calcium-channel blockers, nitrates and chlormethiazole). Most drugs which are biotransformed by hepatic microsomal enzymes tend to show a more modest reduction in metabolism with advancing age, for example diazepam, theophylline, quinidine, imipramine and phenobarbitone. Enzyme induction (but not inhibition) is generally blunted in old age. Non microsomal metabolism in the liver (e.g. conjugation) is generally unaffected with increasing age. Thus drugs which are eliminated primarily by conjugation should be preferred whenever possible, for example temazepam, lorazepam and paracetamol.

RENAL EXCRETION

While drug distribution and metabolism may be significantly altered in old age, the most important effect of ageing is reduction in renal clearance, frequently aggravated by the effects of prostatism, nephrosclerosis, or chronic urinary tract infection. Many aged patients thus possess only limited reserves of renal function, excrete drugs slowly, and are highly susceptible to nephrotoxic drugs. Acute illness may lead to rapid reduction in renal clearance, especially if accompanied by dehydration. Hence, a patient stabilised on a drug with a narrow margin between the therapeutic and the toxic dose (e.g. digoxin) may rapidly develop adverse effects in the aftermath of a myocardial infarction or a

General Practitioner
Klinik Omar
56 New Upper Changi Road #01-1324
Singapore 1646

respiratory tract infection. Other common drugs which have an age-related reduction in renal excretion include aminoglycoside antibiotics, benzylpenicillin, cimetidine, chlorpropamide, doxycycline, tetracycline and procainamide. A decline in renal function is often not apparent from the serum creatinine alone, because the levels do not begin to rise above normal until the clearance has halved and the lower lean body mass in the elderly results in lower rates of creatinine formation.

PHARMACODYNAMICS

Changes in receptor responsiveness and homeostasis are as important as kinetic factors in explaining the variability of drug responses in the elderly.

RECEPTOR EFFECTS

The elderly has increased receptor sensitivity to a number of drugs at a given plasma level. This has been especially well described for psychoactive drugs, anticoagulants and potent analgesics. Thus, lower levels of drugs can produce marked clinical effects, and levels within the "therapeutic range" may cause adverse effects. For a smaller number of drugs, by contrast, a decrease in receptor sensitivity has been found with normal ageing. These include beta-adrenergic agonists and antagonists as well as insulin.

HOMEOSTASIS

Homeostatic mechanisms are commonly impaired and often modify drug response. Baroreceptor adjustment to the erect posture is defective in 20% of elderly people and postural hypotension is exacerbated when antihypertensive agents, diuretics, phenothiazines, tricyclic antidepressants, levodopa, bromocriptine or antihistamines are prescribed.

Thermoregulation is often imperfect and hypothermia (in temperate climates) can be produced not only by direct drug effects but also by a reduction in mobility and cognition. Phenothiazines are the prime culprits, but barbiturates, benzodiazepines, tricyclic antidepressants and narcotic analgesics have all been implicated. Changes in structure and function may expose the 'ageing' brain to increased insult from psychotropic drugs. Other agents in common use (e.g. cimetidine and indomethacin) may provoke unexpected confusion.

Control of bladder and bowel function may be compromised. A loop diuretic may produce urinary retention in patients with coexisting prostatic hypertrophy, or urinary incontinence where mobility is reduced. The anticholinergic effect of tricyclic antidepressants may also cause urinary retention or faecal impaction with secondary urinary incontinence.

ADVERSE DRUG REACTIONS

The incidence of adverse drug reactions rises with age in the adult, especially after 65 years. Polypharmacy, variable compliance, and multiple pathology, combined with altered physiologic response, make the elderly especially prone to adverse drug reactions. The clinical correlation between drug therapy and specific signs and symptoms may be particularly hard to establish in the elderly patient with multiple chronic illnesses who is taking a number of medications. It is, therefore, important to maintain a high degree of suspicion for drug-related adverse effects. Constant vigilance and a meticulous drug history are essential if iatrogenic disease is not to be overlooked. Common culpable drugs include diuretics, digoxin, antihypertensives, analgesics and anti-inflammatories, antiparkinsonian drugs and psychotropic agents.

Adverse reactions often present in the elderly in a vague and non-specific fashion. Adverse drug effects should always be suspected in the elderly person who presents with confusion or the worsening of dementia, and in patients with symptoms related to altered cardiovascular homeostasis, including falls and syncopal episodes. A new onset of incontinence may likewise be the consequence of an unintended drug effect.

The following ten rules for prescribing for the elderly are recommended:

1. Think about necessity for drugs. Is the diagnosis correct and complete? Is the drug really necessary? Is there a better alternative?
2. Do not prescribe drugs that are not useful. Think carefully before giving an old person a drug that may have major side effects, and consider alternatives.
3. Think about the dose. Is it appropriate to possible alterations in the patient's

physiological state? Is it appropriate to the patient's renal and hepatic function at the time?

4. Think about drug formulation. Is a tablet the most appropriate form of drug or would an injection, a suppository or syrup be better? Is the drug suitably packaged for the elderly patient, bearing in mind his disabilities?
5. Assume any new symptoms may be due to drug side effects or, more rarely, to drug withdrawal. Rarely (if ever) treat a side effect of one drug with another.
6. Take a careful drug history. Bear in mind the possibility of interaction with substances the patient may be taking without your knowledge, such as herbal or other non-prescribed remedies, old drugs taken from the medicine cabinet or drugs obtained from friends or relatives.
7. Use fixed combinations of drugs only when they are logical and well studied and they either aid compliance or improve tolerance or efficacy. Few fixed combinations meet this standard.
8. When adding a new drug to the therapeutic regimen, see whether another can be withdrawn.
9. Attempt to check whether the patient's compliance is adequate, e.g. by counting remaining tablets. Has the patient and/or his relatives been properly instructed?
10. Remember that stopping a drug is as important as starting it.

CONCLUSION

Judicious drug therapy in the elderly may improve independence and quality of life, but poor therapy may threaten health and independence. Successful treatment requires an understanding of pharmacology and of the altered and variable drug responses of the elderly. Effective prescribing relies on the patient's compliance, careful and limited use of safe drugs and careful individualisation and monitoring of pharmacotherapy on an on-going basis. Problems can be minimised by sound prescribing habits and the education of patient, carer and doctor.

REFERENCES

1. Caird F I, ed. Drugs for the elderly. Copenhagen: WHO (Europe), 1985.
2. Christophidis N, Rotstein A, Pharmacodynamics and pharmacokinetics in the elderly. Australian Family Physician Vol. 15, No. 2, pg 194-195, February 1986.
3. Everitt D E, Avorn J, Drug Prescribing for the Elderly. Arch Intern Med, Vol. 146, pg 2393-2396, December 1986.
4. Macphee G J A, Brodie M J, Drugs in the elderly. Medicine Internationala, F E Ed, Vol. 3, No. 4, pg 2442-2446, 1988.
5. Powell-Jackson P R, Swift C G, Drug treatment in the elderly. The Practitioner, Vol. 231, No. 1431, pg 874-881.
6. Report of the Royal College of Physicians. Medication for the elderly. Journal of the Royal College of Physicians, Vol. 18, pg 7-17, 1984.

MULTIPLE CHOICE QUESTIONS

1. Recognised changes in pharmacokinetics in the elderly include:
 - A. substantially decreased absorption from the gut
 - B. decreased protein binding
 - C. marked reduction in hepatic conjugation
 - D. decreased volume of distribution of fat-soluble drugs
 - E. decreased volume of distribution of water-soluble drugs.
2. The metabolism of these drugs are impaired with ageing:
 - A. theophylline
 - B. diazepam
 - C. lorazepam
 - D. paracetamol
 - E. phenobarbitone
3. Drugs with impaired renal clearance in the elderly include:
 - A. cimetidine
 - B. digoxin
 - C. streptomycin
 - D. tetracycline
 - E. procainamide

4. Adverse drug effects should be suspected in the elderly patient who presents with:

- A. falls
- B. mental confusion
- C. constipation
- D. urinary incontinence
- E. postural hypotension.

5. Drugs known to cause confusion in the elderly include:

- A. frusemide
- B. methyldopa
- C. cimetidine
- D. digoxin
- E. quinidine.

ANSWERS

- | | | | | | |
|----|---|---|---|---|---|
| 1. | B | D | E | | |
| 2. | A | B | E | | |
| 3. | A | B | C | D | E |
| 4. | A | B | C | D | E |
| 5. | A | B | C | D | E |

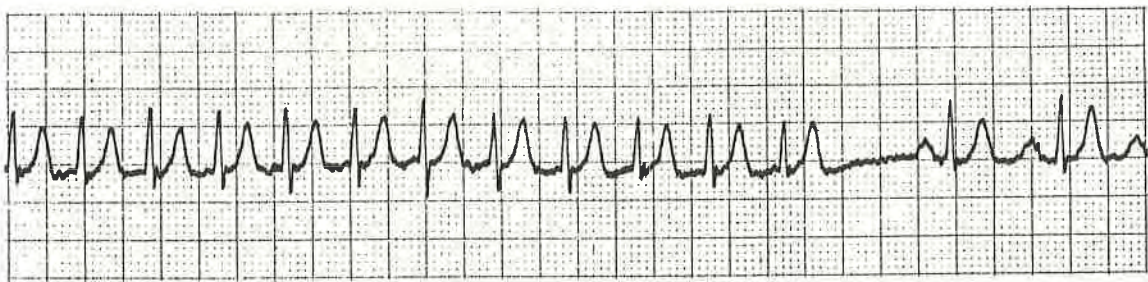
ECG QUIZ

Contributed by Dr Baldev Singh, MBBS (S'pore), MMed (Int Med), MRCP (UK)

This ECG rhythm strip belongs to a young patient who complained of palpitations.

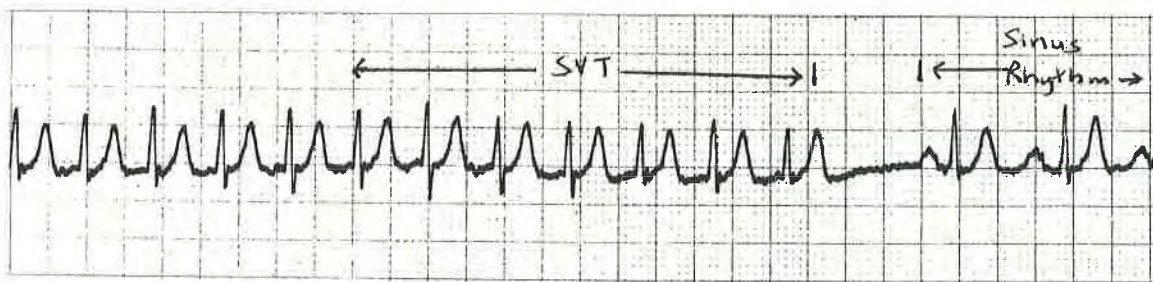
What is the rhythm demonstrated?

What is the drug of choice for terminating this arrhythmia?



ANSWERS TO ECG

1. The ECG shows a tachycardia of 150 to 180/min. The QRS complexes are narrow. This indicates that the arrhythmia arises at or above the AV node. Hence it is supraventricular. The tachycardia is regular which distinguishes it from atrial fibrillation which is an irregular or chaotic rhythm. This rhythm usually arises paroxysmally and is commonly known as PSVT or Paroxysmal Supraventricular Tachycardia.
2. The drug of choice is IV Verapamil 5 to 10 mg. This is successful in terminating the arrhythmia in over 90% of cases.
3. This rhythm strip has captured the point of conversion from SVT to sinus rhythm following an injection of IV Verapamil 5 mg.





NEW BOOK ANNOUNCEMENT

Monitoring Progress in Implementing Strategies for Health for All (Second Report)

Global Strategy for Health for All by the Year 2000

Published in World Health Statistics Quarterly, Vol. 42, No. 4,
1989 under the title "Progress towards Health for All"
1989, 104 pages [E/F]
Sw.fr. 23.—/US \$18.40
Order no. 0084204

This report monitors the global progress of measures being taken to improve the health of the world's populations. The analysis, which covers the period from 1985 to mid-1988, is based on reports of the changing health situation prepared according to a common framework and submitted by the governments of 143 countries. Both general trends in health and disease and more specific trends, as measured by 12 indicators, are considered. The overriding objective is to determine whether the World Health Organization's global strategy for improving world health is resulting in measurable gains.

The report opens with an explanation of the process and mechanisms of monitoring, followed by an overview of global socio-economic developments that have influenced the priorities and budgets of health care. The first main section reviews changes in the evolution of national health policies and strategies, including an outline of the main issues receiving new or renewed emphasis in health policies and an evaluation of the extent to which these issues reflect continuing commitment to the concept of primary health care. The second section, devoted to health systems, considers whether the development of

national health infrastructures is giving due emphasis to primary health care, the need for intersectoral action, the appropriate utilization of resources, including manpower and technology, and field-based research. Other sections monitor changes in the international support, including financial contributions, given to global health development and assess trends in the provision of essential health care, particularly as measured by the health care available to vulnerable and disadvantaged groups. The evolution of environmental health issues and population growth is also briefly reviewed. The final section monitors changes in health status as indicated by data on rates of infant mortality, maternal mortality, and specific communicable and noncommunicable diseases. Annexed to the report is a detailed analysis of data, set out in a series of tables, showing and comparing changes according to 24 indicators of health. A second series of tables presents similarly detailed data for selected global indicators of health in the least developed countries.

On the basis of available data, the report concludes that the period from 1985 to mid-1988 was characterized by measurable improvements in health status, much of which can be attributed to the world's continuing commitment to both the vision and the strategy of health for all by the year 2000. A list of the main obstacles that can be expected to challenge further progress is also presented and discussed.

WHO • Distribution and Sales • 1211 Geneva 27 • Switzerland

Note to reviewers:

Please indicate languages of publication, price, ISBN, and address of local sales agents (see reverse).
A copy of the review or notice would be appreciated.

DSA/89.156



NEW BOOK ANNOUNCEMENT

SPOTLIGHT ON THE CITIES Improving Urban Health in Developing Countries

by *I. Tabibzaden, A. Rossi-Espagnet, and R. Maxwell*
World Health Organization, 1989
iv + 174 pages (Available in English; French and Spanish in
preparation)
ISBN 92 4 156131 9
Sw.fr.30.—/US \$24.00
Order no. 1150329

This book challenges governments and health planners to address the needs of the poor living in the shanty towns and slums of the developing world. Noting that the year 2000 will see an estimated 1 billion people living in urban squalor, the book calls for a radical reorientation of health priorities as the only way to deal with this growing urban crisis. Throughout the book, numerous case studies from around the world are used to illustrate both the magnitude of the problem and the options available for immediate action.

The book opens with an analysis of the principal characteristics and causes of the urban health crisis. Facts and figures, including projected growth over the next three decades, are used to document the chaotic, unbalanced, and uncontrolled growth of urban centres. Readers are also given a list of approaches conventionally adopted by governments, together with an explanation of reasons why such conventional approaches are so often doomed to failure. Conditions in urban centres are further portrayed through a look at features of urban life conducive to ill health and a discussion of their impact on groups at special risk.

The second chapter, concerned with the inadequacy of conventional health services for the

urban poor, presents compelling arguments for a fundamental shift in health care priorities towards the widespread application of primary health care. Citing poverty as the root cause of the urban crisis, the authors also outline the need for an intersectoral approach that goes beyond remedial health care to address the broad range of socioeconomic and environmental factors that undermine health, particularly in an urban setting. Factors identified as requiring change range from the functions of urban hospitals to laws and regulations governing building standards and the security of tenure.

In keeping with these arguments, the third chapter explains the importance of community involvement, emphasizing differences between the concept of community health work in rural areas and the demands and special problems of an urban setting. A chapter devoted to health development in urban areas uses experiences in difference countries to define general principles and lines of action for the improvement of urban health. Readers are reminded that conventional solutions are neither affordable nor appropriate, and that low-cost, decentralized methods, supported by the community, have a greater chance of success. The book concludes with a discussion of what needs to be done to move beyond successful pockets of action towards universal health coverage in the poorest urban communities.

WHO • Distribution and Sales • 1211 Geneva 27 • Switzerland

Note to reviewers:

Please indicate languages of publication, price, ISBN, and address of local sales agents (see reverse).
A copy of the review or notice would be appreciated.

DSA/89.13



NEW BOOK ANNOUNCEMENT

INTERNATIONAL TRAVEL AND HEALTH Vaccination Requirements and Health Advice

Situation as on 1 January 1990

1990, 89 pages (available in English and French)
ISBN 92 4 158014 3
Sw.fr. 14.—/US \$11.20
Order no. 1189000

This annual guide, updated each January, issues authoritative advice on the medical and personal precautions needed to protect the health of travellers. Addressed to physicians, tourist agencies, airlines, and shipping companies, the book presents the latest information concerning health risks and required or recommended vaccinations specific to the intended country of travel. Though the main emphasis is on prevention, country-specific information on common diseases may also help physicians track the cause of illnesses acquired abroad.

The book opens with a brief commentary on obligatory vaccinations, followed by a list showing which vaccinations are required for entry into each of 199 countries and territories. For each country where malaria is endemic, the list also features pertinent details on geographical and seasonal distribution, altitude, predominant species, and the status of drug resistance. Further information on geographical risks is provided in the second chapter, which alerts readers to the main arthropod-borne, food-borne, and water-borne diseases commonly found in different parts of the world. The next chapter lists some of the more important health hazards for travellers and explains what can be done to prevent them.

Malaria

The most substantial changes in the 1990 edition have been made in the section on malaria. Because malaria poses an increasing threat to the health of travellers, advice to physicians and travellers includes specially updated guidelines formulated by a team of international experts. Points highlighted include the importance of protection against mosquitos, the regular use of carefully selected chemoprophylactic drugs where they are needed (and avoiding the use of potentially toxic drugs where they are *not* needed), as well as the importance of seeking prompt medical consultation for therapy if signs of malaria develop. The 1990 edition also features a new section included to alert physicians to contraindications for the use of certain drugs in certain population groups.

The book also issues advice on recommended vaccinations, including a suggested vaccination plan, and discusses the special situations of extended travel, of travelling during pregnancy, of health protection for children, and of health problems that are contraindications for travel. The final chapter outlines the contents of a medical kit, recommends when to seek a medical examination after travel, and urges travel organizers to furnish their clients with objective information on the hazards related to travel and what can be done to prevent them.

WHO • Distribution and Sales • 1211 Geneva 27 • Switzerland

Note to reviewers:

Please indicate languages of publication, price, ISBN, and address of local sales agents (see reverse).
A copy of the review or notice would be appreciated.

DSA/90.014

WORLD HEALTH ORGANIZATION PUBLICATIONS



NEW BOOK ANNOUNCEMENT

Palliative cancer care: policy statement based
on the recommendations of a WHO consultation
Copenhagen, WHO Regional Office for Europe, 1989
ISBN 92 890 1059 2, 54 pages
Price: Sw.fr. 15.-
Order No. 1340041

Cancer is the second most common cause of death in the WHO European Region. Its incidence is expected to increase worldwide, and up to two thirds of cancer patients are not cured. What, then, can society offer the numbers of people facing death from incurable progressive cancer? WHO is working to convince governments and health professionals of the importance of palliative cancer care as part of national health policies and cancer programmes.

The goal of palliative care is to help people with cancer to achieve their maximum physical, emotional, spiritual, vocational and social potential. This book spells out the changes in thinking and the services and resources needed to provide such care to patients and the necessary support to care givers. The publication ranges in scope from the strategy behind palliative cancer care, through the organization and planning of services, to techniques for quality control. Recommendations for action and a list of further reading are also included.

The idea and reality of palliative cancer care embody many of the important themes of health for all. Such care focuses on the quality of life, for example, and on the importance of intersectoral primary health care. This involves not only health personnel but also occupational and social welfare workers, spiritual advisers and the family and other information care givers. This book is valuable reading for all these groups, as well as for government authorities and the public. It offers a useful tool in this special area in the struggle for better health for all.

DSA/89.155

World Health Organization · Distribution and Sales · 1211 Geneva 27 · Switzerland

NOTE TO REVIEWERS

Please indicate languages of publication, price, ISBN, and address of local sales agent (see reverse).
A copy of the review or notice would be appreciated.



THE WORLD ORGANIZATION OF FAMILY DOCTORS



13TH WONCA WORLD CONFERENCE ON FAMILY MEDICINE

FAMILY MEDICINE IN THE 21ST CENTURY

MAY 9 TO 14, 1992

VANCOUVER BRITISH COLUMBIA CANADA

Hosted by THE COLLEGE OF FAMILY PHYSICIANS OF CANADA AND THE BRITISH COLUMBIA CHAPTER

Keynote speakers will focus on the 1992 status of world health, the consequences in ten years if current trends continue, strategies that could change our behaviour in appropriate ways, and how we might contribute to the political will needed to meet the anticipated challenges.

Complementing the daily sessions will be a large commercial and scientific exhibit area open daily for delegates.

Family physicians, academics, colleges, university departments and research units are invited to submit specific proposals for presentations. Free-standing papers, poster sessions, symposia and workshops are all channels through which you or your organization can participate.

YOUR HOST CITY- VANCOUVER
Vancouver, Canada's third largest city, is the jewel of North America's Pacific Coast. Set in the magnificent natural harbour surrounded by snow-capped mountains, lush forests and picturesque bays and coves, Vancouver is not only one of the most beautiful cities in the world, but also clean, orderly and safe. Vancouver is rich in the colour and life of ethnic variety and offers visitors an almost limitless choice of activities.

Blocks of bedrooms have been reserved for conference delegates in a wide variety of downtown hotels.

CLIMATE
May is early summer with temperatures ranging from 15 degrees C to 20 degrees C (60 degrees F to 70 degrees F). Evening temperatures are rarely below 10 degrees C (50 degrees F).

LANGUAGE
The official languages of the World Conference are English and French.

THE VANCOUVER TRADE AND CONVENTION CENTRE
A spectacular venue for the conference. The Centre is located in the heart of the city, on the ocean, overlooking the coastal mountains. The state-of-the-art facility has spacious well-equipped meeting rooms and is convenient to hotels, shops and restaurants.

SOCIAL PROGRAMS
Spectacular Opening Ceremonies
City Tours and Excursions
International Banquet
Day trip to historic Victoria
Special Programs for children and young people

PRE AND POST CONFERENCE TOURS
Banff, Jasper, Lake Louise
Victoria, Whistler, British Columbia Interior, Salmon Fishing Excursion, Ranch Resort Vacations, Eastern Canada, Hawaii, Alaska Cruises

TRANSPORTATION
Vancouver is a major international destination served by 18 major airlines.

- Please send me further information
 I am interested in presenting a paper
(Please print)

Name _____

Address _____

City _____

Province/State _____

Postal/ Zip Code _____

Country _____

Telephone _____

For further information contact:
The College of Family Physicians of Canada
4000 Leslie Street,
Willowdale, Ontario
Canada M2K 2R9
Telephone: 416 493 7513
Facsimile: 416 493 3224

GUIDELINES FOR AUTHORS

THE SINGAPORE FAMILY PHYSICIAN

Authors are invited to submit material for publication in the Singapore Family Physician on the understanding that the work is original and that it has not been submitted or published elsewhere.

The following types of articles may be suitable for publication: case reports, original research work, audits of patient care, protocols for patient or practice management and review articles.

PRESENTATION OF THE MANUSCRIPT

The whole paper

- * Normally the text should not exceed 2000 words and the number of illustrations should not exceed eight.

Type throughout in upper and lower case, using double spacing, with three centimetre margins all round. Number every page on the upper right hand corner, beginning with the title page as 1. Make all necessary corrections before submitting the final typescript.

Headings and subheadings may be used in the text. Indicate the former by capitals, the latter in upper and lower case underlined.

Arrange the manuscript in this order: (1) title page, (2) summary, (3) text, (4) references (5) tables, and (6) illustrations.

- * Send three copies of all elements of the article: summary, text, references, tables and illustrations. The author should retain a personal copy.

The title page

- * The title should be short and clear.
- * Include on the title page first name, qualifications, present appointments, type and place of practice of each contributor.

- * Include name, address and telephone number of the author to whom correspondence should be sent.
- * Insert at the bottom: name and address of institution from which the work originated.

The summary

- * The summary should describe why the article was written and give the main argument or findings.
- * Limit words as follows: 100 words for major articles; 50 words for case reports.
- * Add at end of summary: an alphabet listing of up to 8 keywords which are useful for article indexing and retrieval.

The text

The text should have the following sequence:

- * Introduction: State clearly the purpose of the article.
- * Materials and methods: Describe the selection of the subjects clearly. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well known. Describe new or substantially modified methods, giving reasons for using them and evaluate their limitations. Include numbers of observations and the statistical significance of the findings were appropriate.

Drugs must be referred to generically; all the usual trade names may be included in parentheses. Dosages should be quoted in metric units.

Laboratory values should be in SI units with traditional units in parentheses.

Do not use patient's names, initials or hospital numbers.

- * **Results:** Present results in logical sequence in the text, tables and illustrations.
- * **Discussions:** Emphasise the new and important aspects of the research and the conclusions that follow from them. Indicate the implications of the findings and limitations. Relate the observations to other relevant studies.

Illustrations

- * Diagrams, line drawings, photographs or flow charts are valuable but their use will be subject to editorial policy. Transparencies or prints are acceptable for colour reproduction at the authors' expense.
- * Each illustration must carry its appropriate Figure number and the top should be clearly labelled.
- * Figure legends, typed (double-spaced) and each on a separate page should be no more than 45 words.

Tables

- * Any table must supplement the text without duplicating it.
- * Each should be numbered, typed on a separate sheet with an appropriate title.

Permissions

Authors are responsible for obtaining permission to reproduce published (or otherwise copyright) material. A copy of the written permission(s) must be enclosed. Authors must also enclose a copy of the written consent of any person who can be identified in the text or illustrations.

Acknowledgements

Place these at the end of the text, before references.

References

These should be limited to the work cited in the article.

References should be double spaced and arranged alphabetically by author. Personal communications are not acceptable as references. Unpublished material should be included only if an address can be given from which a copy of the material cited is available.

Authors are responsible for accuracy of references, which should conform to the Vancouver style (see Further reading). List all authors (include all initials) when there are six or fewer; when seven or more list the first three and add et al. Give the title of the paper cited in full, the title of the journal abbreviated according to Index Medicus (if not listed by Index Medicus spell in full); the year; the volume number and the first and last page number of the article.

Editing

All accepted manuscripts are subject to editing for length, clarity and conformity with this journal's style. They will be also subjected to peer review. Statistical assessment will be carried out if relevant.

Copyright

Acceptance of a paper will imply assignment of copyright by the author to the Singapore Family Physician, but the author is free to use his/her material in subsequent publications written or edited by him/herself, provided that the editor of Singapore Family Physician is informed, and that the Singapore Family Physician is acknowledged as the original publication.

Further reading

1. INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS. Uniform requirements for manuscripts submitted to biomedical journals. *Ann Intern Med* 1988; 108: 258-265.
2. Bailar III JC and Mosteller F. Guidelines for Statistical Reporting in Articles for Medical Journals. *Ann Intern Med* 1988; 108: 266-273.

*Address all correspondence to:
The Editor,
Singapore Family Physician
College of General Practitioner
Singapore
College of Medicine Building
16 College Road # 01-02
Singapore 0316*

They gave him life...



...with a death sentence.

They gave him hepatitis B.

Transmitted to as many as 90 percent of infants born to HBsAg/HBeAg-carrier mothers,¹ chronic hepatitis B is clearly associated with cirrhosis and primary liver cancer, reducing his chances for a normal life.

They could have protected him with

rDNA **B-HEPAVAC™ II**
(hepatitis B vaccine (recombinant), MSD)

Proven more than 90 percent effective in preventing perinatal transmission of hepatitis B infection,^{1,2} sparing him from a lifetime of risk.

Detailed prescribing information is available to physicians on request

MSD
MERCK
SHARP
DOHME

SINGAPORE Singapore Biotech Pte Ltd 12 Science Park Drive #02-01/03/04 The Mendel Singapore Science Park Singapore 0511
Summit Co (S) Pte Ltd 460 Alexandria Road #34-02 PSA Building Singapore 0511
MALAYSIA Summit Co (M) Sdn Bhd Lot 6 Jajam 19/1 46300 Pelang Jaya Malaysia
HONG KONG Biotech Medical Corporation Ltd 1205 Guardian House 32 Oi Kwan Road Hong Kong

™ Trademark of Singapore Biotech, a licensee of MERCK & CO., INC. U.S.A.

¹ Stevens, C.E., *et al.* J. Am. Med. Assoc. 257: 2612-2616, May 15, 1987

² Yeoh, E.K., *et al.* Abstract 282. A comparative study of recombinant versus plasma vaccine in high risk infants. 1987 International Symposium on Viral Hepatitis and Liver Disease, London. The London School of Hygiene and Tropical Medicine, May 25-28, 1987

'NIF-TEN'

Prescribing Notes

USE: Management of hypertension.

DOSAGE (adults only):

One capsule daily; recommended where monotherapy is inadequate. If necessary, one capsule twice daily.

CONTRAINDICATIONS:

Heart block, cardiogenic shock, overt heart failure, pregnancy and lactation, co-administration of cardio-depressant drugs (eg, verapamil), marked renal impairment.

PRECAUTIONS:

Poor cardiac reserve, conduction defects, anaesthesia. Caution in patients with chronic obstructive airways disease or asthma. Withdrawal of beta-blocking drugs should be gradual in patients with ischaemic heart disease. Withdrawal of clonidine. Co-administration with Class I antiarrhythmic agents. Interaction with cimetidine or quinidine.

Diabetes: Rarely, a transient increase in blood glucose has been observed with nifedipine in acute studies. Modification of the tachycardia of hypoglycaemia may occur.

SIDE EFFECTS:

Dizziness and bradycardia may occur. Headache, flushing, fatigue and oedema have been reported. Skin rashes and dry eyes have been reported with beta-blockers – consider discontinuance if they occur.

Rare reports of jaundice and gingival hyperplasia with nifedipine.

PRESENTATION:

'Nif-Ten' capsules each containing atenolol 50 mg and slow-release formulation of nifedipine 20 mg.

*'Nif-Ten' is a trademark.
Further information is available
on request.*



Pharmaceuticals

ICI (Singapore) Private Limited,
Finlayson House, 4 Raffles Quay,
Singapore 01 04
Telephone: 2243811



A NEW CONCEPT IN HYPERTENSION CONTROL

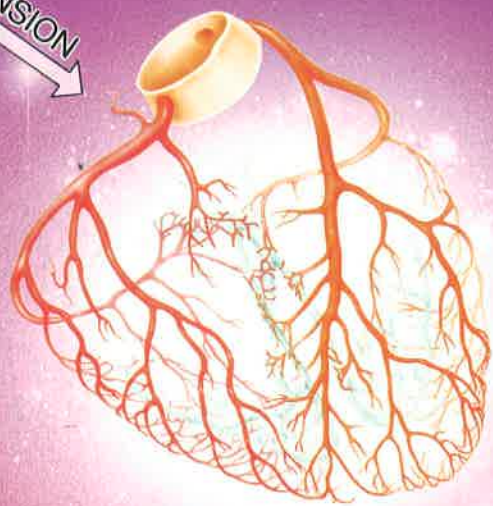


'Nif-Ten' capsules each contain atenolol 50 mg (low-dose Tenormin) and nifedipine 20 mg (slow release).

'Nif-Ten' and 'Tenormin' are trade marks.
Further information is available on request.

HYPERTENSION
Decreases
Blood Pressure

Decreases
Total Cholesterol



Increases HDL
Cholesterol

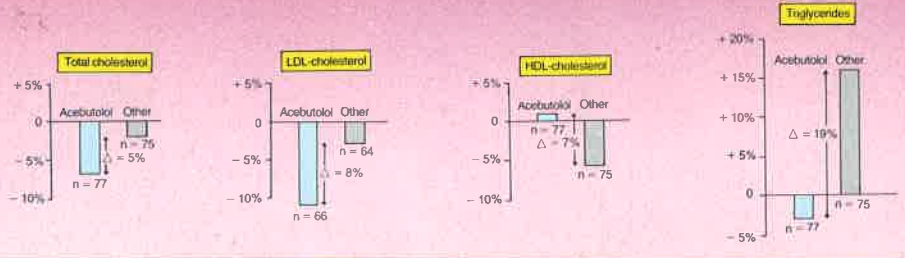
SECTRAL

acebutolol

More than
20% REDUCTION IN
CORONARY RISK
Compared with other Beta-Blockers

A. Clucas and N. Miller, Drugs 36 (Suppl. 2): 41-50 (1988)

Effects of acebutolol and other β -blockers studied in comparative trials on 4 major lipid parameters.



Prescribing Information:
Dosage: (Hypertension) 400mg orally once daily at breakfast. If response inadequate after two weeks increase up to 800mg once daily at breakfast; up to 1,200mg in divided doses may be required. (Angina) Most patients respond to an oral dose of 200mg twice daily. In severe forms up to 300mg i.i.d. may be required. (Cardiac arrhythmias) **Intravenous:** In severe arrhythmias, dosage depends on the degree of urgency and clinical state of the patient. Twenty-five mg may be administered fairly rapidly intravenously over 3-5 minutes. Initial dose may be followed by a further 25mg slow infusion over an hour or more, again depending on urgency. **Oral:** May take about three hours to exert its full effect. Thereafter dosage may be maintained at 100-200mg two or three times a day. **Contra-indications:** Cardiogenic shock, heart block, Sectral (acebutolol) should not be used with verapamil or within several days of verapamil therapy (or vice versa). **Precautions:** In asthmatics; in pregnancy and those with blood pressures of the order of 100/60 or below. In the presence of bradycardia; with catecholamine-depleting drugs such as reserpine; signs of heart failure; with insulin dependent diabetes and metabolic acidosis dosage adjustment may be required. If preferred, discontinue 24-48 hours before anaesthesia. If a beta-blocker and clonidine are given concurrently, the clonidine should not be discontinued until several days after the withdrawal of the beta-blocker. (see Prescribing Information on clonidine) **Side effects:** Bradycardia, gastro-intestinal effects, depression have occurred infrequently. There have been reports of skin rashes/dry eyes associated with the use of all beta-adrenoceptor blocking drugs. Symptoms have cleared when treatment was withdrawn. Discontinuation should be considered if such reaction is inexplicable, cessation of therapy with beta-blockers should be gradual. **Presentation:** 100mg, 200mg capsules; 400mg tablets; injection sol. 2ml ampoules.



Further information available on request:
RHÔNE-POULENC MALAYSIA SDN. BHD.
 LOT 8, JALAN 19/1, 46300 PETALING JAYA, P.O. BOX 150, 46710 PETALING JAYA, SELANGOR. TEL: 03-7551355
RHÔNE-POULENC SINGAPORE PTE. LTD.
 14, Chin Bee Road, Box 21, Jurong Town Post Office, 9161 Singapore 2261.