

SINGAPORE INFECTIOUS DISEASES COMES OF AGE

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What is the subspecialty of Infectious Diseases and does the Singapore medical scene need it? Many of our more senior colleagues would tell us infectious diseases (ID) consist of the classic communicable illnesses: typhoid, cholera, malaria, measles, tuberculosis, etc. However, they would be only partially correct. While that description would fit the field *circa* 1960, it ignores the impressive advances which have occurred in the intervening generation. The last thirty years have seen dramatic progress in numerous areas of ID: clarification of the pathophysiology of infectious diseases (eg septic shock), demonstration of the power of epidemiology (eg AIDS), utilisation of new diagnostic technology (eg polymerase chain reaction), and advances in therapy (eg beta-lactam therapy in gram-negative bacillary meningitis). While classic communicable diseases still exact a terrible toll in developing countries, in Singapore those illnesses constitute only a small percentage of cases managed by ID physicians.

In Singapore, clinical ID includes the routine management of complicated pneumonias, urinary tract infections, bone, joint and soft tissue infections, endocarditis, complicated post-operative fevers, and evaluations of patients with pyrexia of unknown origin. Additionally, infections in immune-compromised hosts with leukaemia, solid tumours, solid organ and bone marrow transplantation, as well as Human Immunodeficiency Virus-infected persons are managed on a daily basis in those hospitals where these specialised cases are seen. Last, but not least, ID physicians working in the Communicable Disease Centre manage the classic communicable diseases, provide advice to travellers, and counsel health care workers exposed to potentially infectious materials.

In addition to clinical consultative services in Infectious Diseases, ID physicians provide administrative input to hospitals regarding infection control procedures and policies, rationalisation of antibiotics formularies, advice on hospital antibiotic utilisation policies, and continuing medical education in the rapidly evolving field of infectious diseases.

The traditional approach to training an ID clinician was as a clinical microbiologist. More recently in Singapore, a number of qualified specialist physicians have taken an alternative route to clinical ID practice by acquiring ID training in both Singapore and overseas centres of excellence. The resultant congenial mixture of clinical microbiologists and specialist physicians with expertise in Internal Medicine and ID provides an excellent resource of practical information for the non-ID clinician. The

depth and breadth of experience and interests held by these specialists will be demonstrated in a series of invited articles on Infectious Diseases topics to be published in this journal.

The remainder of this editorial will focus on issues of current and future relevance to clinicians practising in Singapore with emphasis on the pharmaceutical and medical supply industry's role in continuing medical education.

Bacteria resistant to commonly used antibiotics are an enlarging problem worldwide⁽¹⁾. Singapore currently has a potential problem with antimicrobial resistance, if preliminary data are confirmed⁽²⁾. The availability of broad-spectrum antibiotics has contributed to this situation⁽³⁾. ID physicians now see patients who on admission to hospital have infections with bacteria resistant to most "second-line" antibiotics. Unfortunately, the mistaken notion that therapeutic certainty is available by using certain drugs (as tacitly implied by pharmaceutical industry marketing) results in escalating antibiotic use and an impressive impact on local bacterial ecology⁽⁴⁾. Currently in Singapore methicillin-resistant *Staphylococcus aureus* (MRSA) is present in private and government hospitals; additionally, multi-resistant *Klebsiella* species and pan-resistant *Acinetobacter* species are intermittent problems in several tertiary care institutions⁽⁵⁻⁷⁾. Another antibiotic resistance problem which could be found in Singapore soon is *Enterococcus* sp. resistant to all antibiotics⁽⁸⁾.

Besides increased antibiotic resistance, other recent events in ID include recognising *Helicobacter pylori* as a cause of relapsing gastric and duodenal inflammation, identifying the microbial aetiologies of Whipple disease, Cat Scratch Disease and Bacillary angiomatosis, establishing acceptable terminology for sepsis and the systemic inflammatory response syndrome (SIRS), exploring anti-endotoxin monoclonal antibody therapy in the management of sepsis, and improvement in antiviral therapeutic options. Most impressive are the advances in understanding the pathophysiology of the sepsis syndrome. The impact of this will be felt by the clinician in the not too distant future who will be able to select specific immune-modulating and bacterial toxin-clearing factors to treat septic shock. These therapies should be able to decrease the current 20%-60% mortality associated with Gram-negative septic shock.

The number of HIV-infected Singaporeans now exceeds two hundred and ten⁽⁹⁾. While therapeutic advances are occurring, a "cure" or vaccine will not be available in the near future. Efforts to prevent infections via patient education and counselling should be part of every clinician's patient interview. It is not useful or predictive to assess a patient's risk for acquiring HIV based entirely upon their educational background, age, sex, profession, presumed sexual orientation or religion. Specific questions regarding high risk behaviour should be asked. Creating a non-judgemental atmosphere during the patient interview, which allows discussion of sexual practices as easily as we discuss the frequency, consistency and odour of our patients' bowel habits, is an admirable goal for each of us to strive toward.

Finally, an important issue the medical community must bluntly address is our relationship with the pharmaceutical industry. Between 20%-50% of hospital budgets are devoted to antibiotics. The cost to the patient for antibiotics constitutes only

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a fraction of the health care bill. However, it is in the realm of antibiotics selection that the clinician has the most bewildering array of option available. Unfortunately, antibiotics constitute an area where, on the whole, clinicians have the least in-depth knowledge regarding the advantages, disadvantages and nuances of the various agents. In the past, information regarding appropriate antibiotic use came from a pharmaceutical representative and/or a recruited "expert clinician" from overseas. This practice unfortunately continues today to a certain degree. These educational exercises provided by the industry are poorly disguised "infomercials." The pharmaceutical distributor selects both the speaker and the topic for the audience. The company obtains endorsement from a reputable medical association/society/academy. A dinner is provided to encourage attendance. These affairs do have an impact on prescribing. As a result, antibiotic selection decisions which have both a bacterial ecologic impact and a potentially significant economic impact are made based on information obtained from persons with a financial interest in their product being used. Is this the appropriate manner to disseminate information which influence prescribing? Our patients are indirectly paying for those often lavish dinners and speakers' fees.

The pharmaceutical industry is not doing anything illegal or unethical. In a free market environment, their job is to create a demand for their product. They have a limited number of years to realise a profit before their product becomes available as a generic drug and the profit margin evaporates. Bacterial resistance, which may arise in several years' time as a consequence of promiscuous antibiotic use, may not be as concerning as this quarter's sales quota. The problem lies with us. We should appreciate the impact of this type of advertising and set the limits. We may not be doing enough to set limits. The free-marketer would argue that clinicians are well-informed patient advocates who can see through the rosy tint of advertising and not be unduly swayed by a nice meal and a sincere (ie well-paid and/or well-travelled) visiting expert. If the clinician is unable to see beyond the marketing smoke, then so what – who has been harmed? The free-marketers tell us the scenario is similar to a person purchasing a car whose advertising appealed to the ego and not to one's practical needs. However, there is a difference. The car you buy involves only your money. You live with the reality that it doesn't meet your practical needs. Most clinicians may not be well-informed regarding antimicrobial nuances, indications, limitations, contraindications, and place in the pharmaceutical armamentarium. They may not see through the advertising smoke. The advertising appeals to our anxiety as caregivers. We want the best possible outcome for our patient, the "educational" material implies that product X provides just that reassurance, and we want to believe them. An additional difference is that clinicians ultimately don't pay for antimicrobials and don't, as individuals, perceive the growing problem of antimicrobial resistance.

What can be done? Number one, we can educate ourselves as to what constitute hype versus what constitutes a balanced presentation of the facts. With regard to antibiotics and their proper role in therapy, this education must come in medical

school. Educating clinicians already practising with well-established prescribing and information-acquisition habits is extremely difficult. To address this need, curriculum changes are occurring in the National University of Singapore Faculty of Medicine.

Secondly, we can ask our associations/societies/academies endorsing these educational exercises to vet proposed lecture contents for objectivity prior to granting CME credits for sponsored talks. For those lectures whose contents are not deemed objective, don't provide CME credit. For pharmaceutical and medical supply distributors who violate the agreement regarding lecture content, future restricted access to their clientele can be proposed. The industry will be happy to follow guidelines we set down, provided all are treated equally and fairly under the rules. It is in their interest to do so, as Singapore constitutes both a regional medical opinion leader and a lucrative market.

Thirdly, a member of the medical community with expertise in the area for discussion could be invited to moderate with an aim to providing constructive counterpoints in addition to the usual polite introduction.

Fourthly, and finally, we need to honestly examine possible conflict of interest arrangements between clinicians and the pharmaceutical industry in which doctors, clinics, or hospitals directly benefit from utilisation of a particular product. If these arrangements exist, they are potentially unethical and can only bring to question our sincerity as patient advocates.

In conclusion, the opening sentence of this editorial forwarded two questions. In response, the subspecialty of Infectious Diseases (ID) has been defined and it has become an important part of the local medical scene. In addition to providing a studied perspective on infectious disease management and the rational use of the related therapies, ID physicians hope to initiate and participate in our profession's dialogue defining the clinician's ethical relationship with the pharmaceutical and medical supply industry. By addressing these affiliations openly and honestly now, we will be able to confidently meet the increased scrutiny of our profession by the public (and other agencies) that is sure to follow the inevitable increases in medical care costs to come. ID physicians look forward to participating in our profession's introspection.

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