The Changing of Disease Patterns in the Modern Era

In this issue, several articles remind us that disease patterns and standard of care has been changing over the past 2 decades. In the past, infectious diseases used to be the predominant diseases encountered in daily paediatric practice and the etiology of many childhood illnesses remained unknown. Most of the children with malignant diseases died and the surgical risk of congenital heart diseases was high. Infants with primary immunodeficiency were often undiagnosed and they expired in early childhood. Children with severe autoimmune diseases had very limited treatment option and they often developed long term complications. For the extreme premature babies, the survivors were among the rarity and even if they survived, multiple residual deficits especially in the neurological systems were expected. All of these changed quite drastically in recent years. But unexpectedly, we started to witness the emergence of a significant numbers of new medical problems in recent era.

Chung BHY et al. elaborated on the topic of teratology and developmental pharmacology. As we know, maternal exposure to drugs and chemical during pregnancy is one of the major causes of congenital anomalies or perinatal disorders. Teratology information services have been set up in many developed countries but is still lacking in our locality. As mentioned in the article, we are seeing more children who are survivors of previously incurable diseases. They may have to depend on long term medications and at the same time bear children. On the other hand, new generation of substances being abused by teenagers can also lead to a new set of teratogenic events. While we can utilise the resources from foreign information services with opened access, locally relevant information may not be available. For example, the consumption of traditional Chinese herbs during pregnancy or lactation is an unique situation that we have in this part of the world. What kind of perinatal abnormalities may be attributed by these herbs remains uncertain. Therefore, a local service gap exists in this particular domain.

Many infections can now be curable but we started to witness the emergence of new pathogens or old pathogens with new resistant patterns. As mentioned in the article by Mutlu M, almost one third of the gram negative bacteria found in the PICU of a district hospital were already resistant to 3rd generation cephalosporin and has to rely on carbapenem. It is known that the way how we use the anti-microbials modifies the sensitivity pattern of common bacterial pathogens. Unless we exercise more stringent antimicrobial prescription policy, such trend will surely be continued.

Consequence of substance abuse to new family of social drugs leads to another spectrum of diseases in the adolescent period. Ketamine and midazolam are among the popular drugs being abused by the teenagers and the clinical...
manifestations of these drugs may not be easily recognised. In addition, the risky lifestyle also leads to other problems such as nutritional deficiency. This is highlighted by the article of Ko CH et al., they presented a case of Wernicke’s encephalopathy in an adolescent boy with ketamine abuse, social drinking, smoking and unhealthy eating habits. For paediatricians who seldom encounter this group of high risk adolescent, there may be a potential delayed in diagnosis and management.

Molecular technology helps us to disclose that uncommon presentations of common illnesses may be caused by underlying genetic abnormality of the patients. One such example is acute necrotising encephalopathy associated with influenza infection (Fung STH, et al). This complication is more common among East Asians. A subgroup of them with recurrent episodes of attacks was found to have missense mutations in the nuclear pore gene Ran-binding 2 (RANBP2) gene. Ran-binding protein acts as a scaffolding protein and is important in regulating cellular function in both the immune and nervous system. However, for Asians with sporadic attack of acute necrotising encephalopathy, the exact etiology remains to be explored. Understanding the underlying genetic abnormality will surely help us to adopt a logical therapeutic approach to the disease. It also helps to explain that this rare presentation is not necessary due to any error in management.

With the advancement in curative and supportive care, children with previously fatal condition may live much longer nowadays. For example, children with Down syndrome who developed acute myeloid leukaemia are mostly curable with conventional chemotherapy (Xiong H, et al). The current focus should be directed to the long term therapy related complications on this group of children. On the other hand, some of the children with chronic neurological disorders can live beyond adolescent age. Some previously rare complications in children such as bezoars formation may now be found in this group of children (Balamtekin N et al).

Finally, changes in medical practice may lead to development of new form of illnesses. For example, it appears that the use of heptavalent pneumococcal vaccine has led to a serotype shift and emergence of invasive pneumococcal infection. The serotypes commonly associate with invasive pneumococcal infection are mostly not covered by the 7- and 10-valent pneumococcal vaccine. Some complications such as pneumococcal associated haemolytic uremic syndrome used to be rare but becoming more common now. Clinical evidence showed that the pneumococcal vaccine has decreased the pneumococcal related infection and mortality rate in the population, but it also brings about a new set of problems for us to tackle.

In summary, in this era, we are having exponential growth in the medical knowledge and many old medical problems have been successfully solved. However, we started to see new spectrum of medical problems emerging. We therefore should not be complacence to the current advancement of medicine and have to stay alert and prepare for the new challenges.

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