

Foodborne Diseases in Malaysia

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The two articles pertaining to foodborne infections published in this issue of the Medical Journal of Malaysia (MJM) serve as a timely reminder of the importance of foodborne diseases^{1,2}. Foodborne diseases has been recognized as an emerging infectious disease. Although in many developed countries the incidence of infections caused by the classical enteropathogens like *Salmonella typhi* and *Vibrio cholerae* has decreased, new enteropathogens have emerged. These include *E. coli* 0:157 or the enterohaemorrhagic *E. coli*, *Vibrio vulnificus*, *Listeria monocytogenes*, multiresistant *Salmonella* serotype *Typhimurium* Definitive type 104 and the parasite *Cyclospora cayetanensis*³.

Foodborne infections are common although the vast majority of cases are undiagnosed or unreported. In the United States it has been estimated that foodborne diseases cause approximately 76 million illnesses with 325,000 hospitalisations and 5,000 deaths each year⁴. In Malaysia, where the standard of food hygiene is lower, the official reported figures for food-borne infections probably represent only the tip of a very large iceberg. The true incidence of foodborne infections in Malaysia is unknown and there has been little attempt in ascertaining the magnitude of the problem.

Meftahuddin¹ reports in this issue of the MJM that the reported incidence rates of major food borne diseases had steadily declined from the years 1988 to 1997 except for food poisoning and cholera. Investigation of food poisoning outbreaks from the year 1996 to 1997 showed that 66.5% of the outbreaks occurred in schools whereas only 0.4%

originated from the contaminated food sold at various public food outlets. This data is probably the result of biased reporting. Outbreaks in residential schools are easily detected and in nearly all instances the affected students would be sent to a hospital. Outbreaks originating from a food outlet are much more difficult to detect since the affected individuals would go to different general practitioner clinics or hospital outpatient departments where the vast majority of illnesses are not notified.

A community based study conducted by Yap et al in 1993⁵ among children in one urban and one suburban community estimated the rate of diarrhoeal illness to be 23.6 episodes per 100 person-years. If this rate is extrapolated to the whole country the total number of diarrhoeal episodes annually would run into the millions. Obviously such a large number of illness will have a significant economic impact on the country. Although the vast majority of cases do not result in hospitalizations or deaths, the economic loss due to absentism from work must be considerable.

In this issue, Lee² reports on the pattern of enteropathogens seen at the University Hospital Kuala Lumpur from the years 1978 - 1997. Only 11% of the stool specimens yielded a recognized enteropathogen. This is not surprising since many cases of diarrhea have a viral aetiology and routine microbiological procedures will miss a significant number of bacterial enteropathogens. The five most common bacterial pathogens isolated were non-typhoidal *Salmonella* (57%), enteropathogenic *E. coli* (EPEC) (14%), *Shigella* spp. (11%), *Campylobacter* spp. (5%) and

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Aeromonas spp. (4%). In the United States *Campylobacter* spp is the most common enteropathogen followed by non-typhoidal *Salmonella*⁴. These differences may reflect true differences in disease patterns, differences in medical practice pertaining to obtaining cultures or differences in laboratory techniques themselves. There has not been any documented human cases of foodborne *E. coli* O157, *Cyclospora cayetanensis* or *Listeria monocytogenes* in Malaysia. Again whether it is a case of true absence or failure of diagnosis is not known. However *Listeria* spp has been shown to be a frequent food contaminant in Malaysia⁶. Nearly 74% of imported frozen beef, 43.5% of local beef and 56% of fermented fish sampled in a recent study were contaminated with *Listeria* spp.

Another area of concern is the increasing resistance to antibiotics among enteropathogens. The National Antibiotic Resistance Surveillance programme revealed that in 2000, 10.6% and 8.5% of *Salmonella typhi* isolated in Malaysian government hospitals were resistant to ampicillin and chloramphenicol respectively. With non-typhoidal *Salmonella*, the resistance rates recorded against ampicillin, chloramphenicol and cotrimoxazole were 12%, 6.3% and 13.2% respectively. Among *Shigella flexneri*, all isolates

were resistant to ampicillin and cotrimoxazole and over 80% resistant to chloramphenicol. No resistance to ciprofloxacin was seen among the *Salmonella* and *Shigella* isolates in Malaysia but this is already an emerging problem in Thailand⁷.

The control of foodborne infections requires a multifaceted process. The surveillance mechanism in Malaysia needs to be improved. While large outbreaks like cholera epidemics and food-poisoning in schools are easily detectable, diffuse outbreaks are often missed. There is a need to establish a system of active surveillance in sentinel populations. With improved surveillance and more accurate data, the magnitude of the problem from the both health and economic aspects can then be calculated.

The lack of food hygiene in this country also needs to be addressed. This applies particularly to street food. At the moment the street food industry is largely unregulated. Many hawkers are unlicensed and food is often prepared in private homes away from the point of vending, thus making enforcement of any food hygiene laws difficult. Obviously more effective enforcement of the law is required. This has to be complemented by a vigorous and comprehensive public education programme on the importance of food hygiene.

References

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