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EDITORIAL

Infective Endocarditis: An Old Problem with a Changing Face

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In the pre-antibiotic era and early antibiotic era, streptococci were the prevalent causative microorganisms for infective endocarditis (IE) while rheumatic heart disease was the most common predisposing cause. At that time, antibiotic prophylaxis before dental procedure was recommended [1].

Turning into the 21st century, a changing face of IE was observed. While the overall incidence rate remained relatively stable, there were changes in epidemiology, predisposing aetiology and microbiology. Degenerative valve diseases, prosthetic valves, intravenous drug use and implantation of cardiovascular implantable electronic devices (CIED) emerged as more important predisposing conditions, while the prevalence of rheumatic heart disease decreased. This was a pattern that was evident in developed countries, where improvement in health care was not shown to lower the incidence of IE. Instead, healthcare associated infective endocarditis (HCAIE) has gained significance, due to increased use of CIED and more widespread use of various other invasive diagnostic and therapeutic procedures which predisposed to bacteremia. Going along with this change in epidemiology was the growing importance of staphylococci as culprit microorganisms [2,3]. Between 2007 and 2009, revised international guidelines restricted antibiotic prophylaxis only for patients at highest risk [4,5]. Various observational studies have looked into

whether this change in practice led to increase in incidence of IE, with inconsistent results [2,3].

In various parts of the world with different economies and different medical resources, variations in change in epidemiology are expected [2]. The local situation is less clear as data are limited. An early local study of community acquired IE in the period between 1995 and 2005 indicated stable incidence in the 10-year period, with intravenous drug addiction followed by chronic rheumatic heart disease being the most common predisposing causes [6]. In this issue of the *Journal*, Yiu reported a single-center study on IE cases from 2002 to 2016 [7]. It likewise showed a stable incidence rate in the study period. The in-hospital mortality was high at 29.1% which was comparable to other reports [2,3]. Notably, HCAIE accounted for a significant proportion of 32% and the proportion of HCAIE showed increasing trend over years. Importantly, HCAIE was associated with a higher mortality of 52.4% as compared to community acquired IE (mortality 18.0%), though the difference became insignificant after adjustment for Charlson comorbidity index. Regarding microbiology, *Staphylococcus aureus* was the most prevalent isolated microorganism, which carried a worse outcome as compared to streptococcal IE. Remarkably, methicillin resistance was increasingly observed over the study period. The findings of this study were similarly seen in another local study just published [8]. These studies together added to the

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literature and provided insight that the epidemiology of IE in Hong Kong changed in a similar pattern reported in other developed countries. More importantly, these findings should heighten the awareness of growing significance of HCAIE and call for meticulous efforts to minimize bacteremia during intravascular procedures, which are key preventive measures for IE, and are crucial for tackling this old problem with a changing face.

Ethics information

Not applicable.

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Conflict of Interest

None declared.

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