

Sudden Death in Hong Kong: Are We Naturally Protected?

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Introduction and Background

Sudden death is a major health care problem that affects thousands of lives everyday worldwide. In the past decades, western epidemiological and scientific data on sudden death had allowed better understanding of the underlying etiology and enabled development of strategies in secondary prevention of out-of-hospital sudden death. Despite their large population, Asian countries have relatively little published data on sudden death.^{1,2}

Incidence and Demographics of Sudden Death in Hong Kong

The first territory-wide survey on sudden death in the Hong Kong SAR was conducted by the Cardiology Division, Department of Medicine, University of Hong Kong. This survey shows an incidence of 1.8 sudden deaths per 100,000 population in the year 1997. Out of 1204 cases of out-of-hospital sudden deaths reported to the coroner, the underlying causes were acute myocardial infarction in 31%, coronary artery disease in 26%, hypertensive heart diseases in 14%, ruptured aortic aneurysm in 6%, cardiomyopathies in 5%, other cardiovascular diseases in 7%, and non-cardiovascular causes in 11%. In less than 1% of these cases, no structural abnormality could be identified by postmortem examination. (Dr K Lee, unpublished data)

Opinions expressed are views of the authors and not necessarily the view of the editorial board or the Hong Kong College of Cardiology.

Implications

This incidence is much lower compared to figures of the western world. In the United States, the annual incidence of sudden death is estimated to be 18 per 100,000 population.³ Even after this is adjusted for a lower incidence of coronary artery disease in Hong Kong, the sudden death rate is still significantly lower than the western figures. Apart from this, the proportions of coronary artery disease and other underlying causes of sudden deaths are quite similar, suggesting that the propensity to sudden death may be genuinely low among the population in Hong Kong. Whether this is explained by genetic, dietary or socio-economical factors remain to be resolved.

Post-infarct Ventricular Arrhythmia

Post-infarct ventricular arrhythmia and sudden death is common among western population. However, an analysis of the long-term outcome of just over 300 patients admitted into a regional hospital with acute myocardial infarction shows a 2-year sudden death rate of only 1.7%.⁴ The ICD implantation rate in Hong Kong is around 10 per million population per year, a figure much lower than the average of 50-200 per million of the western societies. As the health-care system in Hong Kong allows provision of full financial assistance to patients who cannot afford the device, this low implant rate is not solely due to economical reasons. In order to account for the reduced incidence of sudden death among Hong Kong Chinese, we need to pursue further studies to elucidate the mechanism of the apparent "protection" against malignant ventricular arrhythmia in Chinese.

Idiopathic VF Syndromes

Since Brugada described the syndrome of sudden death in patients with apparently normal heart and ST elevation over V_1 to V_3 , it has come to general consensus that symptomatic patients with this syndrome is predisposed to malignant ventricular arrhythmia. However, both the incidence and natural history of asymptomatic individuals having a similar ECG pattern are largely unclear. Contrary to the belief that the "sudden unexplained death syndrome" is prevalent in Asia,⁵ the incidence of sudden death with no identifiable structural cause is less than 1% of all sudden deaths in Hong Kong. These handful of cases may comprise other entities like Wolff-Parkinson-White syndrome, congenital or acquired long QT syndrome, and unrevealed drug intoxication.⁶ This finding may help to call for more scientific data to halt the unwarranted enthusiasm in diagnosing and treating "asymptomatic Brugada syndrome" in individuals with suspicious ECG pattern.

Conclusion

This first territory-wide survey of sudden death in Hong Kong reveals inspiring findings and substantiates previous observation about the low incidence of sudden death among Chinese. It would be interesting and important to find out what makes the difference.

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