

RISKS ASSOCIATED WITH PR PROLONGATION

Prolongation of the PR interval by more than 200 ms, which signifies first-degree atrioventricular block, has been found to increase the risk of developing atrial fibrillation, the need for a pacemaker, and premature death. This finding indicates that a prolonged PR interval is an important marker of adverse events.

First-degree atrioventricular block is typically regarded by clinicians as harmless. This notion is based on limited data, mainly from studies in healthy, young, military men, not necessarily representative of the general population. By contrast, a study in middle-aged men indicated that this condition might be associated with an increased risk of coronary heart disease. To re-examine the prognosis of PR prolongation, researchers from Harvard University, Boston University and the NIH conducted a prospective analysis of data from participants enrolled in the Framingham Heart Study. “We are very fortunate to have several decades of detailed clinical information on relatively healthy individuals living in the community,” says Susan Cheng, a cardiologist at Harvard University, adding, “these detailed records include routine electrocardiograms, which are obtained from participants at each examination.”

The study group included 7,575 individuals (mean age 47 years) who had undergone baseline electrocardiography between 1968 and 1971 and were followed up until 2007. Compared with individuals in whom PR interval was normal, participants with PR prolongation of more than 200 ms had a twofold higher risk of developing atrial fibrillation, a threefold higher risk of eventually requiring a pacemaker, and a 1.4-fold higher risk of premature death. Further studies are now required to determine how PR prolongation leads to adverse events. “Meanwhile,” says Cheng, “individuals found to have PR prolongation may warrant follow-up for signs of developing conduction system disease.”

Sharmini Rajanayagam

Original article Cheng, S. *et al.* Long-term outcomes in individuals with prolonged PR interval or first-degree atrioventricular block. *JAMA* 301, 2571–2577 (2009).