Thirty-year trend reversal of paroxysmal supraventricular tachycardia subtype in Korea: Role of female social status

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Introduction: Dominant subtype of paroxysmal supraventricular tachycardia (PSVT) has been known as atrioventricular reentrant tachycardia (AVRT) in South Korea with old reference, in contrary to atrioventricular nodal reentrant tachycardia (AVNRT) in Western countries. Recent trend of PSVT has not been evaluated despite of immense increment of PSVT ablation. Therefore, we aimed to investigate serial trend of PSVT in Korea during 30-year, and aimed to evaluate determinant factors for the trend change.

Methods: A total of 3,377 patients underwent electrophysiologic study (EPS) due to PSVT in Chonnam National University Hospital from Jan 1988 to Dec 2017. PSVT were classified as AVNRT, AVRT with concealed bypass tract (CBT), AVRT with manifested bypass tract (MBT), and atrial tachycardia (AT). Temporal trends of PSVT subtype was analyzed by annual year and 5-year. Multivariate regression analysis was performed to identify independent factors for the change of temporal trends.

Result: In the early period, from late 1980s to early 1990s, AVRT with MBT was the dominant form of PSVT. Until 2006, AVRT with CBT showed most remarkable increasing trend, constituting AVRT (the sum of AVRT with CBT and AVRT with MBT) as the dominant form PSVT in Korea. However, dominant form of PSVT has been reversed to AVNRT since 2007. Because of remarkable increment of AVNRT during last the last decade, overall ratio of AVNRT during 30-year is higher than AVRT or AT (48.4% vs. 43.2% vs. 8.4%, p<0.001). In the analysis of annual genderic incidence, gender ratio was reversed from 2:1 at the early 1980s to 1:1 at the late 2000s. During the latest decade, prevalence of female gender is even higher than male gender (52.1% vs. 47.9%, p<0.001). Multivariate regression analysis demonstrated that female gender was the independent factor (adjusted odds ratio 2.8, 95% confidence interval 1.63-3.54, p=0.002) for the change of temporal trend.

Conclusion: Contrary to earlier reports for the incidence of PSVT subtype in Korea, AVNRT is the most dominant form of PSVT. Also, PSVT constitution has been changed from AVRT to AVNRT since 2007. Female gender was the most important determinant factor the change of temporal trend, which might be associated with the improvement of social position of women in Korea, resulting in easy access to hospital.