

The association between seasonality and the incidence of permanent pacemaker implantations due to atrioventricular block

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Abstract

Background: Previous studies described a higher prevalence of cardiovascular comorbidities during the winter season. Data regarding seasonal association of atrioventricular (AV) block are scarce. **Methods:** A retrospective cohort analysis of all patients admitted to a tertiary medical center with AV block requiring a permanent pacemaker (PPM) implantation between 2006-2017 was performed. In a time-series analysis, the seasonal incidence of PPM implementations due to AV block was assessed and adjusted for meteorological factors. The association between the weekly incidence of PPM implantations and the weekly rates of influenza as reported by the Israel Center of Disease Control (ICDC) were also assessed. **Result:** The study population included 759 patients. Mean age was 76.1 years and 55% were males. Most of the patients (34.1%) were admitted in the winter season. In multivariate analysis, there was a significantly higher incidence of PPM implantations among men during the winter season as compared to the fall season (Adjusted IRR [Incidence Rate-Ratio] 1.40, 95% CI 1.05;1.88; $p<0.05$), and a significant increase of 24% in the incidence of PPM implantations during the influenza season as compared to the rest of the year (Unadjusted IRR 1.24, 95% CI 0.99;1.53; $p<0.05$). **Conclusion:** In the present analysis the incidence of PPM implantations due to AV block was higher among men during the winter season and correlated with high influenza illness rates. Further prospective and larger studies are required to assess these findings.

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