

Temporal trend in the implantation of implantable electronic cardiac devices: Analysis of the last 10 years in Brazil

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Introduction: Implantable Electronic Cardiac Devices (CIED), such as pacemakers (PM) implantable cardioverter-defibrillator (ICD) - including associated resynchronization therapy, are interventions that can modify the course of several lethal cardiac conditions. It is estimated that the number of CIED procedures/year in the USA is greater than 200 thousand and in Europe more than 500 thousand. In Brazil, there is still a limited supply despite the aging of the population and chagasic heart disease in our country. **Objective:** To analyze the characteristics related to CIED implants in Brazil between 2011 and 2022. **Methodology:** Data from DATASUS were evaluated using 11 procedure codes from the SIGTAP table between 2012 and 2022. The variables described were: type of CIED, regional distribution, time/year distribution, expenses/devices, nature of care and length of stay. **Results:** An average of 19,039 procedures/year was observed. Among these, 5 codes are related to the epimyocardial/thoracotomy route and represent only 1.64% of the annual average number of implants. Distribution of most relevant CIEDs: PM single chamber: 915 (5.15%), ICD Muti-site 443 (2.37%), Muti-site PM: 333 (1.78%), single chamber ICD: 239 (1.28%). There was no clear trend of fluctuation in annual rates, except for a slight drop in 2020. When analyzing the regions, the Southeast was the one with the highest number of implants, representing 43.63% of the total annual average, followed by the South (22.82%), Northeast (21.40%), Central-West (8.74%) and North (3.41%). Concerning expenses, the ICD (double, single and multi-site chamber) corresponded to 76.35% of the average annual expense (R\$ 579,741,919.00), despite the lower absolute number of implants when compared to the PM. Regarding the nature of care, especially in relation to PM, 53% occurred in an emergency scenario. Regarding the average number of days/hospitalization, double-chamber PM had the lowest average (3.65), then single-chamber PM (4.32) - possibly due to the emergency scenario and less complex related underlying disease, while epimyocardial ones revealed a higher average (10.92 of the unicameral PMs of this route). All ICDs had an average length of stay > 5 days, leading to the inference of a more delicate clinical profile of patients, as well as the implant decision based on the aggregate costs mentioned. **Conclusion:** The CIED scenario in Brazil is still behind developed countries and has significant regional discrepancies, despite the Southeast being more populous. Public measures need to be rethought to encourage the implantation of CIEDs, which have been proven to reduce the mortality of those affected by severe heart diseases.