

ABSTRACT

Divers with Implantable Cardiac Devices: Clinical Characteristics and Variations in Diving Practice

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Background: Little is known about patients with implantable cardiac devices who continue to dive. Accordingly, we sought to identify the clinical characteristics, diving practices, and complication rates of this important population.

Methods: We invited divers with implantable cardiac devices, both pacemakers and defibrillators, to complete an online survey using the Qualtrics system on a secured server. Participation from eligible divers was invited using social media outlets. Of the 41 divers who contacted us, 29 were deemed eligible and took the survey. Divers who reported complications were contacted for clarification via a phone interview. Categorical variables were presented as frequencies and percentages, and continuous variables were given as medians (25th, 75th percentiles).

Results: The median age of respondents was 62 (56, 59) and 93.1% were male. Twelve (44.4%) reported pacemaker dependence. A substantial number (14/29, 48.3%) had a prior history of significant arrhythmia, including cardiac arrest (10.3%), ventricular tachycardia (13.8%), and atrial fibrillation (34.5%). The cohort continued aggressively diving post-device implantation, diving a median of 80 times (15, 200) to a median maximum depth of 100 feet (85, 110). Decompression diving was performed by 8 respondents (27.6%); 62.1% dive solo, and 75% dive >12 hours from a hospital. The population has a high prevalence of ongoing cardiac symptoms, including 40.7% with at least weekly presyncope and 14.8% with palpitations. Complications within 30 days of diving included an MI in one subject (3.7%) and decompression illness requiring hyperbaric oxygen therapy in another (3.7%). Specific advice on diving was given to 70.4% and varied from complete diving prohibition to no restrictions.

Conclusions: Patients with implantable cardiac devices who continue to dive have significant cardiac histories, high rates of pacemaker dependence, aggressive diving practices, and appreciable complication rates. These findings and the heterogeneity of professional advice given mandate further research and guideline development.