

Lower pacemaker implantation rates for atrioventricular block during COVID-19

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Introduction: The first wave of the COVID-19 crisis was associated with a reduction of patients presenting with acute cardiovascular disease. However, there is only limited data showing the trend of pacemaker implantations and their indications.

Purpose: To evaluate pacemaker implantations before, during and after the first COVID-19 wave, stratified by indication.

Methods: We analysed the weekly rates of pacemaker implantation at our centre during the first national lockdown for COVID-19 at the between 16 March 2020 and 29 April 2020 (weeks 12-17 / 2020), compared to the implantation rates 6 weeks before (weeks 6-11 / 2020), 6 weeks afterwards (weeks 18-23 / 2020), and the same time frame in 2017-2019. To reduce bias due to postponed planned procedures, we stratified pacemaker implantations into the following groups: total implantations (including box changes), new pacemaker implantations, implantation due to AV block, implantation due to supraventricular conduction disturbances, and other implantations.

Results: The total number of total weekly implantations was reduced from 10.7 (weeks 6-11 / 2020) to 4.2 (weeks 12-17 / 2020; -60.1%, $p = 0.02$). We found no significant reduction in the same time frame in 2017-2019 (6.5 vs. 6.1 per week, $p = 0.29$). We found a similar effect in "new" pacemaker implantations (8.5 vs. 3.2 per week, -62.7%, $p = 0.02$) and AV block (5.0 vs. 1.5 per week, -70%, $p = 0.03$). There was no reduction in pacemaker implantation due to sick sinus syndrome (2.5 vs. 0.8 per week, -66.7%, $p = 0.12$) and other indications (1.0 vs. 0.8 per week, -16.7%, $p = 0.86$).

In the six following weeks (18-23 / 2020), the total numbers (6.0 per week) and indications other than AV block rose to baseline ($p > 0.05$), but patients with AV block were still less prevalent (1.7 per week, $p = 0.04$).

Conclusion: The reduction of total and new pacemaker implantations during the COVID-19 lockdown was mainly based on a reduced pacemaker implantation rate for AV block. This effect persisted even after the national lockdown. This analysis implies that a significant number of patients with AV block may have avoided medical contact during and after the lockdown and therefore have experienced increased mortality.