

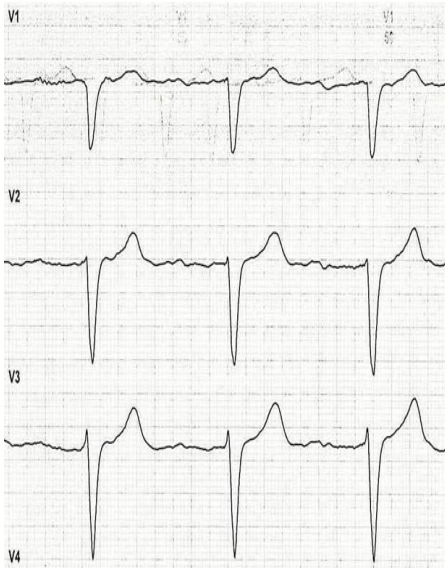
Supplemental Figure Legend

Supplemental Figure S1: Exercise-induced high grade atrioventricular (AV) block in patient with SCN5a C335R and TTNtv (IV.1).

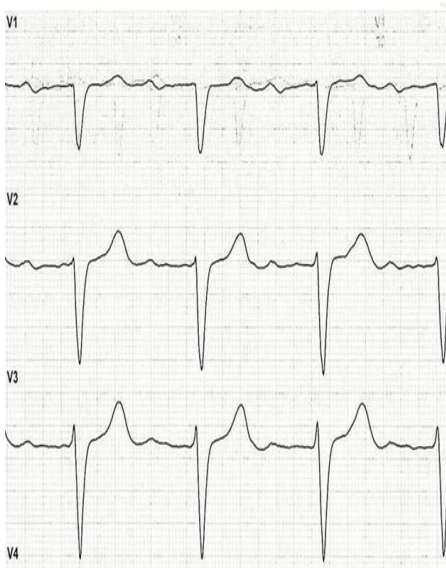
Supplemental Figure S2 : Generated patient-specific induced pluripotent stem cells (iPSC) show full pluripotency characteristics (A-D). Pluripotency characterization is shown exemplary for iPSC clones from patient IV.14. **A:** The iPSC exhibited typical round colony-forming stem cell morphology (left) and were positive for alkaline phosphatase activity (right). Scale bars: 200 μm . **B:** The generated iPSC express pluripotency markers OCT4, SOX2, LIN28 and GDF3 on the mRNA level in similar amounts to an already published iPSC line (PC = positive control). Somatic cells like fibroblasts (FB) and mouse embryonic fibroblasts (MEF) are negative for expression of these pluripotency genes. GAPDH was used as a housekeeping gene. iPSC-IV.14 c1 and iPSC-IV.14 c2 represent iPSC clone 1 and 2 of patient IV.14. **C:** The iPSC cell lines express pluripotency markers on the protein level, which is visualized by immunofluorescent stainings against OCT4, SOX2, NANOG, LIN28 and TRA1-60. Scale bar: 100 μm . **D:** In vitro embryoid body formation assay confirmed differentiation capacity into all three germ layers. Positive signals were obtained after immunofluorescent staining against endodermal marker AFP, mesodermal marker α -SMA and ectodermal marker β -tubulin (β -TUB). Scale bars: 100 μm .

Supplemental Figure S1

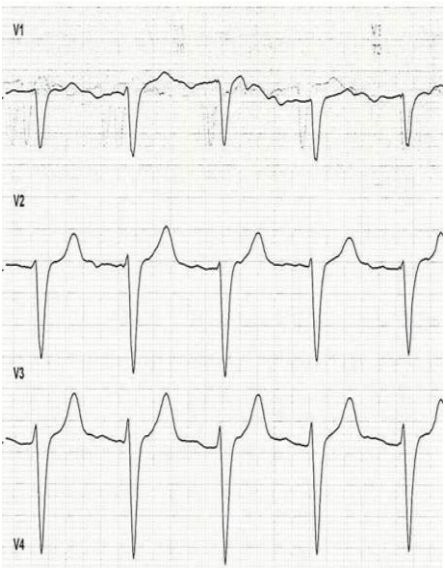
before exercise



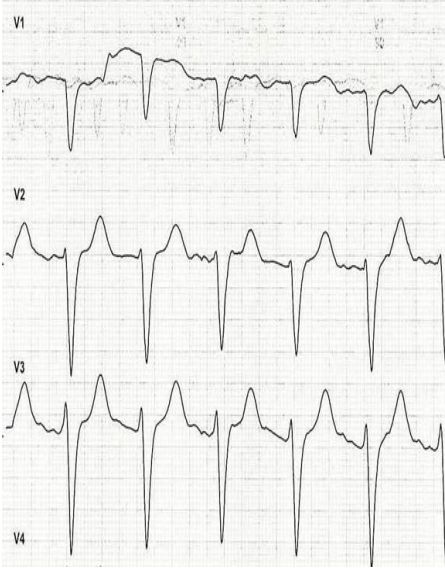
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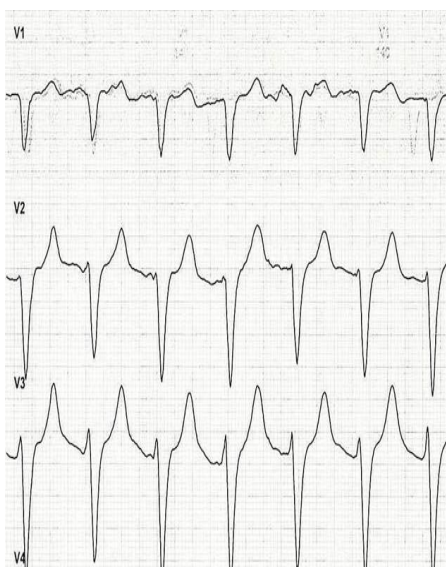
100 Watt



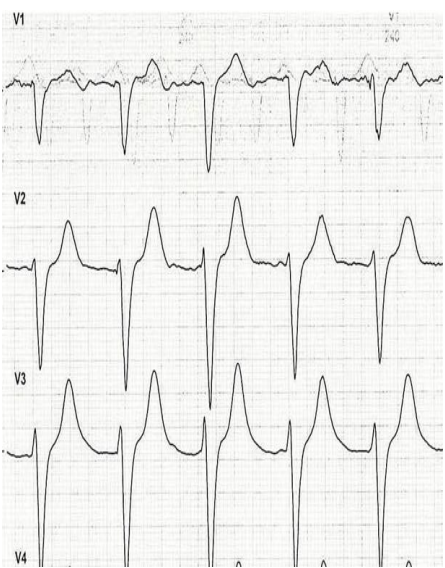
150 Watt



200 Watt



after exercise 25 Watt



after exercise 25 Watt



Supplemental Figure S2

