Oral adrenergic agents produced Ventricular fibrillation and QT prolongation in an elderly patient carrying an *RYR2* variant.

Kanae Hasegawa¹, Kentaro Ishida², Shinsuke Miyazaki³, Seiko Ohno⁴, Minoru Horie⁵, Hiroyasu Uzui², and Hiroshi Tada¹

¹University of Fukui

²Faculty of Medical Sciences, University of Fukui

³University of Fukui Faculty of Medical Sciences

⁴NCVC

⁵Shiga University of Medical Science

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Abstract

Mutant cardiac ryanodine receptor channels (RyR2) are “leaky,” and spontaneous Ca²⁺ release through these channels causes delayed afterdepolarizations that can deteriorate into ventricular fibrillation (VF). RYR2 is a causative gene of type 1 catecholaminergic polymorphic ventricular tachycardia (CPVT). Some patients carrying RYR2 mutations in CPVT exhibit QT prolongation and are initially diagnosed with long QT syndrome. However, none have been reported to cause drug-induced VF in patients with RYR2 variants. We describe the first case of an elderly woman with drug-induced QT prolongation and VF who carried a novel *RYR2* variant but no other mutations related to long QT syndrome.

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