

Meeting abstract

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Electrophysiological effects of heat shock proteins and dofetilide on cardiac preparations of streptozotocin-induced diabetic rats

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Vaccination with different heat shock proteins (HSP60, HSP65) prevented the development of low-dose streptozotocin (STZ)-induced autoimmune diabetes in C57BL/KSJ mice. The aim of our work was to examine whether the vaccination with HSP65 can prevent the well-known cardiac electrophysiological characteristics of diabetes. The electrophysiological effects of dofetilide (a class III antiarrhythmic drug) were also studied. Diabetes was induced by a low dose of STZ (3×30 mg/kg i.p.), the vaccination with HSP65 (100 µg/animal) occurred 7 days before STZ treatment. The parameters of transmembrane action potentials (APs) of right ventricular papillary muscles in rats were studied by the microelectrode technique. The previously observed prolongation of AP duration in diabetes induced by a high dose of STZ was recorded in the case of low dose of STZ too. The vaccination with HSP65 could not modify the increase of AP duration. Dofetilide (1–10 µM) did not cause any significant alterations in the parameters of AP either in diabetic or in the HSP-treated animals. Our results with dofetilide differ from published data. This result could be due to the fact that the ion current characteristic of the rat ventricular repolarization phase highly differs from that of other species. We need further experiments to find out additional explanations of our results.

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