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APOPTOSIS IN CARDIAC CONDUCTION SYSTEM IN SUDDEN INFANT DEATH SYNDROME (SIDS): PRELIMINARY RESULTS.

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Crib death is an old problem in medicine. The search for an explanation is both a medical and public concern. There is still no generally accepted explanation as to how and why it happens. New ingenious possibilities are frequently introduced. Some authors provide further evidence in support of a cardiac cause for crib death. It appears that final common pathway could be some form of fatal electrical instability of the heart. Postnatal morphogenesis of the human heart is an important part of its normal development. The term "resorptive degeneration" has been originally suggested by James in 1968 to indicate the normal process of cardiac molding. Such molding consists of degeneration, cell death and replacing in an orderly programmed way. The programmed cell death named apoptosis is of particular interest; its unpredictable but rapid occurrence could play a role in the pathogenesis of SIDS. The aim of this study is to determine the presence of apoptosis in the resorptive degeneration areas of the conduction system in SIDS and in explained death (ED) cases. We analyze 5 hearts from autopsied cases of SIDS (ranging in age from 2 to 12 months) and 5 from cases of ED with the same range of age. Histological examination of the cardiac conduction system was performed on serial sections, using in situ endolabeling of fragmented DNA (TUNEL) method. The apoptotic index in SIDS (range: 0% - 0.01%) was lower than in ED cases (range: 0 - 0.1%). Apoptosis of the cardiac conduction system is discussed as a process favoring electrical stability, but such process, if defective, could leave in place some accessory communication between the atrio-ventricular pathway and the adjacent ordinary myocardium.