The Abstract book

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ROOM 4 – PARALLEL SESSION 1 – Physiology/Pathology

Chairs: Russel Scott Ray – Houston, Texas USA & Lauren Luijerink – Sydney, New South Wales AUS

O-014 Sudden Unexpected Infant and Perinatal Death: Pathological Findings of the Cardiac Conduction System

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This Session available Abstracts

O-014 Sudden Unexpected Infant and Perinatal Death: Pathological Findings of the Cardiac Conduction System

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Objective: Sudden infant death syndrome (SIDS), sudden neonatal unexpected death (SNUD), and sudden intrauterine unexpected death (SIUD) are major unsolved, shocking form of death that occur frequently and can happen at any time without warning. The body of literature on the anatomo-pathological substrates in the cardiac conduction system of SIDS-SIUD and their possible relationship with risk factors and triggers is fragmentary and scarce. The main objective of this work is to analyze the cardiac conduction system findings collected at the national referral center for SIDS-SIUD.

Methods: A total of 123 autopsied cases of SIDS (59.35% males, 40.65% females, mean age ± SD: 103.49 ± 67.17 days), 36 cases of SNUD (61.11% males, 38.89% females, mean age ± SD: 8.4 ± 9.17 days), and 127 cases of SIUD (45.67% males, 54.33% females, mean age ± SD: 36 ± 4.59 gestational weeks) were analyzed. In-depth pathological examinations of the cardiac conduction system were performed on serial sections according to the Lino Rossi Research Center's protocol.

Results: Among the studied cases, the following findings were observed:

resorptive degeneration (SIDS: 88.7%, SNUD: 88.88%, SIUD: 56.69%), fetal dispersion (SIDS: 73.17%, SNUD: 91.66%, SIUD: 78.74%), Mahaim fibers (SIDS: 40.65%, SNUD: 44.44%, SIUD: 32.28%), cartilaginous meta-hyperplasia (SIDS: 56.91%, SNUD: 25%, SIUD: 33.07%), septated atrio-ventricular junction (AVJ) (SIDS: 21.14%, SNUD: 33.33%, SIUD: 38.58%), AVJ duplicity (SIDS: 6.5%, SNUD: 11.11%, SIUD: 2.36%), intramural bifurcation (SIDS: 3.25%, SNUD: 2.77%, SIUD: 4.72%), without significant differences.

Conclusions: The prevalence of cardiac conduction findings was consistent across the SIDS, SNUD and SIUD groups. These findings provide valuable insights into the pathological characteristics of the cardiac conduction system in SIDS-SIUD that might be potential morphological substrates for the development of cardiac arrhythmias. Further investigation and study of the conduction system are needed to understand the underlying mechanisms of these forms of death.