NATIONAL HISTORY OF PERINATAL Atherosclerosis DUE TO MATER NAL CIGARETTE SMOKING AND/OR AIR POLLUTION

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Introduction: The knowledge on the natural history of atherosclerosis is mainly based on experimental studies in animals maintained on a high cholesterol diet. Aim of this study is to study the natural history of perinatal atherosclerosis due to maternal cigarette smoking and/or air pollution.

Materials and Methods: Our study population included 22 stillborns and 49 infants who died unexpectedly in the first 24 hours of life. A total of 27 infants were randomly selected for histological examination. Histological evaluation was performed in all infants, and in selected cases submitted to specific immunohistochemical methods for lymphocyte, monocyte, and macrophage cell identification.

Results: In 45% of the cases the mothers were smokers during pregnancy. This study showed a significant correlation between early atherosclerotic lesions and parental smoking. In fact, we observed a high incidence of multinucleated lesions in the aortic arches of fetuses of smoker mothers and of atherosclerotic plaques in infants of smoker parents. Precisely, in 55% of fetuses and in 47% of the infants, multinucleated atherosclerotic lesions of varying entity were detected. The alterations ranged from focal plaques with mild myxoid thickening to juvenile soft plaques in infants, reducing the arterial lumen.

Conclusions: The atherogenic role of cigarette smoke is clearly demonstrated in both the maternal and the fetal populations. The results on the greatest incidence of the cardiovascular pathology in fetuses and infants of smoker mothers. The studies on the passive cigarette smoke effects already detectable in fetuses have allowed to describe the features of the initial atherosclerotic lesions and their progression in intensity if the mater nal smoking persists. Since the fetus represents the ideal model for the evaluation of the maternal cigarette smoke effects, our data allow not only to determine the atherogenic role of the passive cigarette smoke, but also to re-examine the actual concepts on the nature of the atherosclerotic process.

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MULTIDISCIPLINARY APPROACH IMPROVES THE NUTRIENT INTAKE AND NUTRITIONAL STATUS OF LOW SOCIOECONOMIC LEVEL CHILDREN WITH HEART DISEASES IN BRAZIL

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Background: Increased nutrient needs and reduced intake are important factors contributing to malnutrition in children with heart disease.

Objective: To evaluate the role of a multidisciplinary team in improving the nutrient intake and nutritional status of low socioeconomic level children with heart diseases in Brazil.

Methods: Over a 6-month period we prospectively evaluated a clinical protocol for nutrition assessment and counseling. Fifty-five low socioeconomic level pre-uptake children aged between 1 month and 14 years, who had been referred to the nutrition support unit at our clinic were studied with regard to anthropometric measurements and dietary intake. Dietary intake was expressed as a percentage of RDA and anthropometric assessment was performed using the NCHS standard.

Results: The overall prevalence of malnutrition was 77.9%. Significant increases were seen in intake of vitamin C (p < 0.001), vitamin A (p < 0.001), vitamin E (p < 0.01), thiamine (p < 0.001), iron (p < 0.001), zinc (p < 0.001), and lipids (p < 0.01). Follow-up evaluation showed significant increases in scores of weight for age (p < 0.001), weight for height (p < 0.001) and weight for age (p < 0.006).

Conclusions: The multidisciplinary approach resulted in improvements in nutrient intake and nutritional status of low socioeconomic level pediatric outpatients with heart disease.

Key Words: Nutrition status, Heart disease, Micronutrient, Nutrition support, Children