v. 4, n. 62, 2024

International Journal of Health Science

THE RELEVANCE OF THE SINGLE UMBILICAL ARTERY AS AN INDICATOR OF NEONATAL EMERGENCIES

Anna Carolina de Moura Carlota
UFMT - Universidade Federal de Mato Grosso - Cuiabá
http://lattes.cnpq.br/1623016759420220

Nadia Gabrielle Mukae Iqueuti
UFMT - Universidade Federal de Mato Grosso - Cuiabá
http://lattes.cnpq.br/5761889970279390

Agda Ariely De Moura Costa
UFMT - Universidade Federal de Mato Grosso - Cuiabá
http://lattes.cnpq.br/2934316197672916

Thamyres de Carvalho Galaxe
UFMT - Universidade Federal de Mato Grosso - Cuiabá
https://lattes.cnpq.br/1881351968190529

Abstract: The single umbilical artery (AUU) is one of the main pathologies related to the structures that make up the umbilical cord, being present in approximately 1% of newborns and originating from a wide range of congenital defects. The literature review discussed here provides a brief survey on the relationship between the concomitance of UAU and other pathological conditions in newborns, highlighting its value as an important indicator of possible future neonatal emergencies.
Keywords: Single umbilical artery, emergency, neonatology.

INTRODUCTION

During pregnancy, the umbilical cord is vital for fetal metabolism, being formed by two arteries and a vein surrounded by an extracellular matrix, Wharton's jelly, and whose impairment is responsible for one fifth of fetal and neonatal deaths. Among the main pathologies is the single umbilical artery, present in 1% of newborns and often arising from a wide range of congenital defects.

After stating this issue, this condition is an important indicator of a possible prognosis for neonatal emergencies.

OBJECTIVE

To analyze the relevance of single umbilical artery diagnosis for possible neonatal emergencies.

METHODOLOGY

This is an integrative literature review, of a qualitative nature, carried out with articles published between 2010 and 2023 and available in full on the PubMed and Google Scholar platforms, using the descriptors "umbilical artery malformations", "umbilical artery emergencies", "umbilical artery", "single umbilical artery emergency" and "pathophysiology of the single umbilical artery". In total, 6 works were collected, three of which were selected because they were most relevant to the topic. Results: Single umbilical artery (SUA) is an anomaly present in 0.5 to 1% of fetuses, with an increase to 8.8% in twin pregnancies. In Siargkas et al. (2023), when comparing the cases that did or did not have UAU of the 6528 pregnancies, even isolated, it was found that this condition was associated with a greater risk of reduced fetal growth, stillbirth and prematurity, in addition to significantly increasing the admission of newborns and length of stay in intensive care units (ICUs). In the series of autopsies performed by Rittler et al. (2010), of the 5539 covered, AUU was present in only 2.4%; however, when comparing those who did or did not have some type of malformation, this condition was present in 6.5% of those who had a congenital defect, a rate 10.8 times higher than in the group without deformities. Around 83% of cases of UAU were accompanied by some type of deformity, especially kidney and heart. Finally, in Nunes (2020), in the follow-up of individuals previously diagnosed with only isolated UAU, hidden malformations were found in 5.76%, resulting in a percentage of 40.76% mutual incidence of UA with deformities.

CONCLUSIONS

Although there is no medical consensus on the degree of influence of UAU on postnatal outcomes, its connection with the appearance of serious structural problems is undeniable. Therefore, its diagnosis, both pre- and post-natal, is an important resource to prevent the occurrence of emergency situations in newborns.

REFERENCES

NUNES, A. F. **Diagnóstico Pré-Natal de Artéria Umbilical Única: Malformações Associadas e Desfechos Perinatais**. Tese de Mestrado—Universidade de Coimbra, 2020.

RITTLER, M. et al. **Single Umbilical Artery and Associated Malformations in over 5500 Autopsies: Relevance for Perinatal Management**. Pediatric and Developmental Pathology - Sage Journals, 2010.

SIARGKAS, A. et al. **Prenatal Diagnosis of Isolated Single Umbilical Artery: Incidence, Risk Factors and Impact on Pregnancy Outcomes.** Universidade Aristóteles de Salonica, 2023.