

Opinion

Research question approach in the study of neonatal sepsis

Magda Olivia Pérez-Vásquez, José Locia-Espinoza and Luz Irene Pascual-Mathey*

Faculty of Biological Pharmaceutical Chemistry, Veracruzana University, Xalapa, Veracruz, Mexico

Abstract

Neonatal sepsis is a systemic infection that causes high morbidity and mortality rates in newborns during the first month of life. Although there is abundant literature on the subject, it remains a fundamental public health problem due to its high prevalence in underdeveloped countries. This article aims to highlight the importance of the approach in investigating neonatal sepsis using causality research questions, which generate knowledge to promote better care and reduce the complications associated with neonatal sepsis in newborns.

Introduction

The scientific investigation allows us to answer a specific question to address a particular problem. In this context, the definition of the type of research question is relevant because the scope of the research and the application of the generated knowledge depend on it. In epidemiological studies, the focus goes along with the type of question; these can be prevalence or incidence (assesses one or several characteristics, retrospectively or prospectively), comparison (identifies differences or similarities between groups) and association (identifies relationships between variables), however, in these three types of question it is not possible to establish causality; in addition, there is the question of causality (identifies cause and effect). In sepsis research in a hospital care, a prevalence or incidence question would be: *What is the number of cases and characteristics of neonatal sepsis in a country or population?* The previous has been essential to know this public health problem's magnitude and describe the variables of interest [1,2]. However, in these cases, the information generated does not allow a complete understanding of the sepsis phenomenon or its associated factors. A comparison question about neonatal sepsis would be: *Is the prevalence of sepsis the same in different socio-demographic contexts?* This question makes it possible to compare the variables of interest in diverse populations. Other studies use an association research question, for example: *What are the factors or variables of both the mother and the neonate that are or are not related to sepsis?* Studies with this type of question found that sepsis is associated with

More Information

*Address for Correspondence:

Luz Irene Pascual-Mathey, Faculty of Biological Pharmaceutical Chemistry, Veracruzana University, Xalapa, Veracruz, 91190, Mexico, Tel: +52 2281251392; Email: lupascual@uv.mx

Submitted: July 21, 2022

Approved: July 30, 2022

Published: August 01, 2022

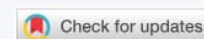
How to cite this article: Pérez-Vásquez MO, Locia-Espinoza J, Pascual-Mathey LI. Research question approach in the study of neonatal sepsis. Arch Pharm Pharma Sci. 2022; 6: 019-020.

DOI: 10.29328/journal.apps.1001031

ORCID: <https://orcid.org/0000-0001-5150-3140>

Copyright License: © 2022 Pérez-Vásquez MO, et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Keywords: Sepsis; Neonate; Causality research questions; Morbidity decrease



newborns' premature birth and low birth weight, maternal preeclampsia, prenatal asphyxia, gender, an extended hospital stay, gestational age, and urinary tract infections [3-6]. However, it is impossible to determine if these factors cause sepsis in this research question. In this sense, studies that answer a question of causality allow a better understanding of neonatal sepsis since they determine whether a factor is the cause of sepsis. An example of a causality question would be: *Does parenteral nutrition cause neonatal sepsis?* Research of this type, carried out by our work group in a tertiary care hospital, showed that gestational age, newborn weight and the days of hospital stay are risk factors that allow actions to be taken for better care of newborns. The identification of the risk factors that cause sepsis allows, subsequently, the design of research protocols that evaluate the impact of interventions in reducing the prevalence or incidence of sepsis; since this will make it possible to demonstrate that interventions have been adequate to minimize the complications associated with it, as well as reducing morbidity and mortality rates. For this reason, it is crucial that the focus of epidemiological research, particularly those related to the study of neonatal sepsis, consider causality research questions since identifying epidemiological factors that constitute risk factors allows better protocolization in managing sepsis to improve the treatment of patients [7-10].



Conclusion

The approach to neonatal sepsis research using causality-type questions is essential for the successful care of neonates.

Acknowledgment

To the Centro de Alta Especialidad Dr. Rafael Lucio and the National Council of Science and Technology (CONACyT).

References

1. Donis, JH. Types of lesions for clinical and epidemiological studies. *Avan Biomed.* 2013; 2(2):76-99. <https://www.redalyc.org/articulo.oa?id=331327989005>
2. Anaya-Prado R, Valero-Padilla C, Sarralde-Delgado A, Sánchez-González JM, Montes-Velázquez L, Gil-Villarreal F. Sepsis neonatal temprana y factores asociados [Early neonatal sepsis and associated factors]. *Rev Med Inst Mex Seguro Soc.* 2017 May-Jun;55(3):317-323. Spanish. PMID: 28440985.
3. Lekić E, Bobović S, Vukicević J, Nešović M, Dragaš L. Early-onset neonatal sepsis and risk factors in the preterm infants. *Perinatal Journal.* 2019; 27(3):143-9.
4. Mogollón C, Bautista E, Hernández-Arriaga G, Bueso-Pineda L, Tovani-Palone M, Mejia C. Factors associated with early-onset neonatal sepsis in children of Peruvian Military Personnel. *Electron J Gen Med.* 2019; 16(5):em156. doi.org/10.29333/ejgm/114059.
5. Marín-Romero M, Iglesias-Leboreiro J, Bernárdez-Zapata I, Rendón-Macías ME. Características de la sepsis neonatal en una unidad de cuidados intensivos de unidad privada. *Rev Mex Pediatr* 2015; 82(3); 93-97. <http://www.medigraphic.com/pdfs/pediat/sp-2015/sp153c.pdf>
6. Arias-Arellano S, Cáceres-Aucatoma F, Geysen D, Segarra-Galarza K. Factores de riesgo asociados a sepsis neonatal tardía [Risk factors associated with late-onset neonatal sepsis]. *Rev Med Inst Mex Seguro Soc.* 2019 Jul 1;57(4):226-231. Spanish. PMID: 32241039.
7. Ahmed M, Yasrab M, Khushdil A, Qamar K, Ahmed Z. Neonatal sepsis in a tertiary care hospital: bacteriological profile and its antibiogram sensitivity. *Pak Armed Forces Med J.* 2018; 68(6):1654-8. <https://www.pafmj.org/index.php/PAFMJ/article/view/2566>.
8. Pérez-Ramírez R, Lona-Reyes, J, Quiles-Corona, M, Verdugo M, Ascencio E, & Benítez, A. Sepsis neonatal temprana, incidencia y factores de riesgo asociados en un hospital público del occidente de México. *Rev chil infectol.* 2015; 32(4):447-452. <https://dx.doi.org/10.4067/S0716-10182015000500003>
9. Mogollón C, Bautista E, Hernández-Arriaga G, Bueso-Pineda L, Tovani-Palone M, Mejia C. Factors associated with early-onset neonatal sepsis in children of Peruvian Military Personnel. *Electron J Gen Med.* 2019;16(5):em156. doi.org/10.29333/ejgm/114059
10. Villegas-Velásquez IL, Pascual-Mathey LI, Valenzuela-Limón OL, Molina-Prior PE, Locia-Espinoza J, Pérez EC, Pérez-Vásquez MO. Risk Factors for Sepsis in the Neonatal Intensive Care Unit of a Tertiary Hospital in Mexico. *J Biomed Res Environ Sci.* 2021; 2(12):1183-1186. doi: 10.37871/jbres1370.