

## LETTER TO EDITOR

# Congenital diaphragmatic hernia in neonates: challenging its pathophysiology and survival boundary

Angel Francisco Samanez-Obeso<sup>1,2</sup><sup>1</sup> Instituto Nacional de Salud del Niño San Borja, Lima, Perú<sup>2</sup> Universidad Científica del Sur, Lima, Perú

## To the Editor

Newborn care has an essential place in the public agenda within the sustainable development goals, as it seeks to reduce the rate of preventable deaths and decrease morbidity due to the significant consequences it can have on long-term well-being and development (1). Neonatal mortality shows the level of prenatal care and newborn care in a given region, indicating the impact of intervention programs. According to the Peruvian Ministry of Health, the leading causes of neonatal mortality are prematurity, infections, asphyxia, and congenital malformations (2).

Congenital malformations are a health problem worldwide, being one of the main causes of death, chronic diseases, and disabilities (3). The World Health Organization estimates that more than 300,000 newborns die each year from congenital malformations, mainly within the first four weeks of birth (4).

Congenital diaphragmatic hernia (CDH) is one of the best-known congenital malformations, characterized by a defect in the diaphragm, leading to protrusion of abdominal contents into the thoracic cavity, interfering with the normal development of the lungs (5). This surgical pathology challenges physiology in both prenatal and postnatal stages. Due to its complexity originating in the early stages of fetal development, it leads to conditions such as pulmonary hypoplasia and pulmonary hypertension, determinants in neonatal mortality based on anatomical severity, and pathophysiological implications (6). Additionally, patients with CDH face long-term health complications, including respiratory problems, nutritional problems, neurodevelopmental delays, CDH recurrences, and orthopedic deformities (7).

Although it is a pathology of great importance, there are no precise epidemiological figures due to the lack of specific databases, for example, the unknown mortality of unborn cases (fetal deaths), stillbirths, and cases of neonatal death before referral to centers with a higher level of care (4).

**Cite as:**

Samanez-Obeso AF. Congenital diaphragmatic hernia in neonates: challenging its pathophysiology and survival boundary. *Investig Innov Clin Quir Pediatr.* 2023;1(2):69-70. doi:10.59594/iicqp.2023.v1n2.68

**Corresponding author:**

Angel Francisco Samanez-Obeso  
Address: Instituto Nacional de Salud del Niño San Borja, Lima, Perú  
Telephone: +51 969549996  
E-mail: asamanez@insnsb.gob.pe

**ORCID iDs**

Angel Francisco Samanez-Obeso  
 <https://orcid.org/0000-0003-1994-3351>

**Received** : 02/10/2023**Accepted** : 30/11/2023**Published** : 29/12/2023

This publication is licensed under a Creative Commons Attribution 4.0 International License.

Copyright © 2023, The authors

## REFERENCES

1. Organización de las Naciones Unidas. Objetivo 3: Garantizar una vida sana y promover el bienestar para todos en todas las edades [Internet]. New York: ONU; 2015 [citado el 29 de agosto de 2023]. Disponible en: <https://www.un.org/sustainabledevelopment/es/health/>
2. Centro Nacional de Epidemiología, Prevención y Control de Enfermedades. Vigilancia epidemiológica de la mortalidad fetal y neonatal Perú, 2022 (SE 1-52) [Internet]. *Bol Epidem.* 2022 [consultado el 29 de agosto de 2023];31:2114-20. Disponible en: [https://www.dge.gob.pe/epublic/uploads/boletin\\_boletin\\_202252\\_31\\_153743.pdf](https://www.dge.gob.pe/epublic/uploads/boletin_boletin_202252_31_153743.pdf)
3. Abdou MSM, Sherif AAR, Wahdan IMH, Ashour KSED. Pattern and risk factors of congenital anomalies in a pediatric university hospital, Alexandria, Egypt. *J Egypt Public Health Assoc.* 2019;94(1):3. doi: 10.1186/s42506-018-0004-3
4. World Health Organization. Congenital anomalies. Geneva:WHO; 2016.
5. Chandrasekharan PK, Rawat M, Madappa R, Rothstein DH, Lakshminrusimha S. Congenital Diaphragmatic hernia - a review. *Matern Health Neonatol Perinatol.* 2017;3:6. doi: 10.1186/s40748-017-0045-1

6. Salas GL, Otaño JC, Cannizzaro CM, Mazzucchelli MT, Goldsmit GS. Hernia diafragmática congénita: predictores posnatales de mortalidad. *Arch Argent Pediatr.* 2020;118(3):173-9. doi: 10.5546/aap.2020.eng.173
7. American Academy of Pediatrics Section on Surgery; American Academy of Pediatrics Committee on Fetus and Newborn; Lally KP, Engle W. Postdischarge follow-up of infants with congenital diaphragmatic hernia. *Pediatrics.* 2008;121(3):627-32. doi: 10.1542/peds.2007-3282
8. Chatterjee D, Ing RJ, Gien J. Update on Congenital Diaphragmatic Hernia. *Anesth Analg.* 2020;131(3):808-21. doi: 10.1213/ANE.0000000000004324.