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**PREVALENCE AND TREATMENT OF PERSISTENT PULMONARY HYPERTENSION IN THE NEWBORN IN A PEDIATRIC HOSPITAL**

**PREVALENCIA Y TRATAMIENTO DE HIPERTENSIÓN PULMONAR PERSISTENTE EN EL RECIÉN NACIDO EN UN HOSPITAL PEDIÁTRICO**



## Área del Conocimiento: 3 Medicina y Ciencias de la Salud

### Abstract

Persistent pulmonary hypertension of the newborn (PPHN) is defined as the failure of the normal circulatory transition that occurs after birth. It is a syndrome characterized by marked pulmonary hypertension that causes hypoxemia and right-to-left extrapulmonary shunting of blood. In the treatment of PPHN, the main goal is to increase oxygen flow to the baby's organs to prevent serious health problems. Treatment may include drugs, mechanical ventilation and respiratory therapy. We performed a retrospective, descriptive and transversal study to investigate the prevalence and treatment of patients with PPHN who were admitted at the Hospital del Niño DIF from 2004 to 2008. Data were collected from charts of the Hospital. The data included demographic, clinical data and those on drugs usage. A total of 38 patients were included (prevalence of 5.7%). The average age of patients was  $8.4 \pm 1.4$  days. The mortality rate was 42.1%. Data were collected and 45 different drugs were given to the pediatric patients. The median number of drugs/inpatient was 8.3 (1-18). The therapeutic class most prescribed was anti- infective (29.9 % of all the prescriptions), followed by cardiovascular and renal drugs (26.4 % of all the prescriptions) and gastrointestinal agents (14.6 % of all the prescriptions). Ranitidine was the drug most commonly used, followed by ampicillin and midazolam. We found a high mortality rate and as in many studies, the therapeutic class most used was the anti-infectives.

**Key words: Hypertension pulmonary**



## Área del Conocimiento: 3 Medicina y Ciencias de la Salud

### Resumen

La hipertensión pulmonar persistente del recién nacido (PPHN) se define como la falla de la transición circulatorio normal que se produce después del nacimiento. En el tratamiento de la HPP, el objetivo principal es aumentar el flujo de oxígeno a los órganos del bebé para prevenir problemas de salud graves. El tratamiento puede incluir medicamentos, ventilación mecánica y terapia respiratoria. Se realizó un estudio retrospectivo, descriptivo y transversal para investigar la prevalencia y el tratamiento de pacientes con HPP que fueron ingresados en el Hospital del Niño DIF 2004 a 2008. Los datos fueron recolectados de las cartas del Hospital. Los datos que se incluyen datos demográficos, clínicos y aquellos sobre el uso de drogas. Un total de 38 pacientes (prevalencia del 5,7%). La edad media de los pacientes fue de  $8,4 \pm 1,4$  días. La tasa de mortalidad fue del 42,1%. Los datos fueron recolectados y 45 diferentes drogas fueron entregadas a los pacientes pediátricos. El número medio de fármacos / hospitalización fue de 8,3. La clase terapéutica más empleado fue la anti-infecciosos (29,9% de todas las recetas), seguido por las drogas cardiovasculares y renales (26,4% de todas las prescripciones) y agentes gastrointestinales (14,6% de todas las prescripciones). La ranitidina es el fármaco más utilizado, seguido de ampicilina y midazolam. Se encontró una alta tasa de mortalidad y, como en muchos estudios, la clase terapéutica más utilizada fue la anti-infecciosos.

**Key words: Hipertensión Pulmonar**



## Área del Conocimiento: 3 Medicina y Ciencias de la Salud

### Introduction

Persistent pulmonary hypertension of the newborn (PPHN) is a cardiopulmonary disorder characterized by systemic arterial hypoxemia secondary to elevated pulmonary vascular resistance with resultant shunting of pulmonary blood flow to the systemic circulation. Management of the disease includes treatment of underlying causes, sedation and analgesia, maintenance of adequate systemic blood pressure, and ventilator and pharmacologic measures to increase pulmonary vasodilatation, decrease pulmonary vascular resistance, increase blood and tissue oxygenation, and normalize blood pH.

Our objective was performed a retrospective, descriptive and transversal study to investigate the prevalence and treatment of patients with PPHN who were admitted in the pediatric intensive care unit of the Hospital del Niño DIF, Pachuca Hidalgo, Mexico, from 2004 to 2008.



## METHODS

- Data were collected from charts of the Hospital del Niño DIF, Pachuca, Hidalgo, Mexico.
- The data included demographic, clinical data and those on drugs usage.
- A total of **38 patients** with PPHN were included



## RESULTS

- A total of 38 patients (23 male and 15 female) were included (prevalence of 5.7%)
- The mortality rate was 42.1%.
- Data were collected and 45 different drugs were given to the pediatric patients.
- The median number of drugs/inpatient was 8.3 (1-18).
- The therapeutic class most prescribed was anti- infectives (29.9 % of all the prescriptions), followed by cardiovascular and renal drugs (26.4 % of all the prescriptions) and gastrointestinal agents (14.6 % of all the prescriptions).
- Ranitidine was the drug most commonly used (89.5 % of all the patients) followed by ampicillin (65.8%) and midazolam (63.2%)



# RESULTS



The mean age of patients was  $8.4 \pm 1.4$  days

The mean height of patients was  $48.7 \pm 2.1$  cm

The mean weight of patients was  $2940.5 \pm 430.3$  g

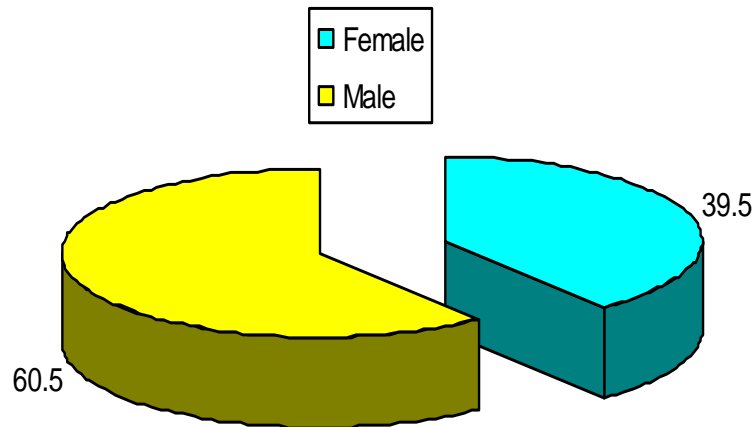


Figure 1. Percentage of female and male patients



# RESULTS

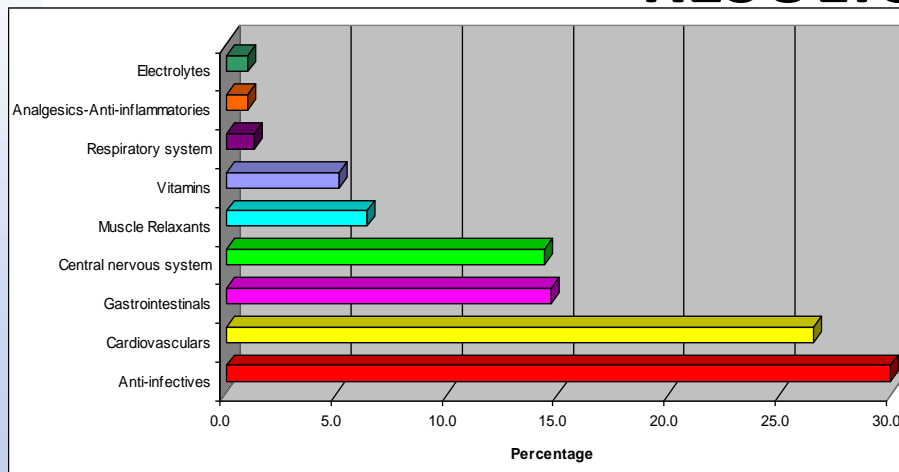


Figure 2. Classes of drugs commonly used in the patients with PPHN

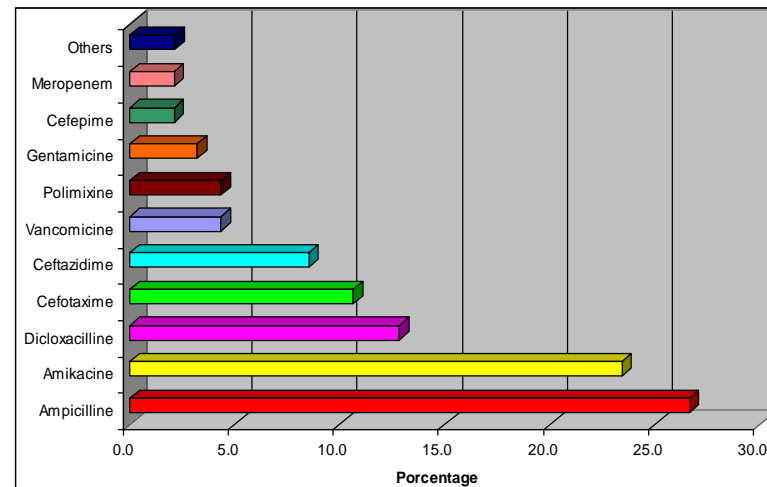


Figure 3. Antibiotics commonly used in the patients with PPHN

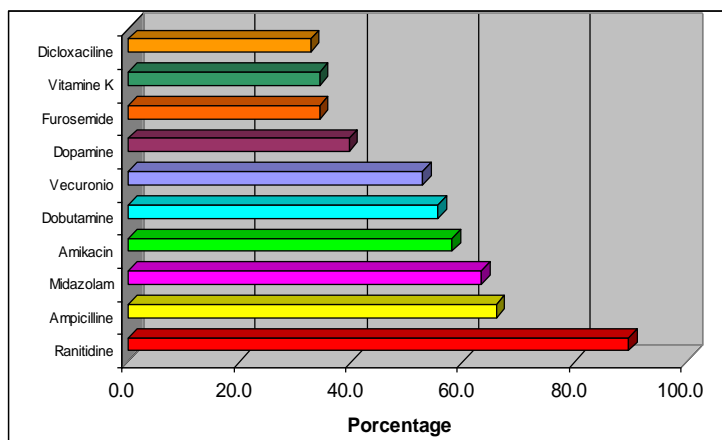


Figure 4. Individual drugs commonly used in the patients with PPHN





## **CONCLUSIONS**

**WE FOUND A HIGH MORTALITY RATE  
AND AS IN MANY STUDIES,**

**THE THERAPEUTIC CLASS MOST USED WAS THE  
ANTI-INFECTIVES.**



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