



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research
Vol. 11, Issue, 03, pp.2363-2364, March, 2019

DOI: <https://doi.org/10.24941/ijcr.34887.03.2019>

**INTERNATIONAL JOURNAL
OF CURRENT RESEARCH**

RESEARCH ARTICLE

PREVALENCE OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE (G6PD) DEFICIENCY IN A GROUP OF NEONATES

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ARTICLE INFO

Article History:

Received 11th December, 2018
Received in revised form
13th January, 2019
Accepted 17th February, 2019
Published online 31st March, 2019

ABSTRACT

In this study, the aim was to find out the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of neonates admitted in Rockland Hospital, Delhi. In this study, the blood samples of 300 neonates were evaluated respectively. In this study, the results showed that the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of 300 neonates admitted in Rockland Hospital, Delhi was nil (0%).

Key Words:

G6PD-- Glucose-6-Phosphate
Dehydrogenase, Deficiency, Prevalence.

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Citation: Chaudhary Veena, 2019. "Prevalence of glucose-6-phosphate dehydrogenase (g6pd) deficiency in a group of neonates", *International Journal of Current Research*, 11, (03), 2363-2364.

INTRODUCTION

The Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency affects more than 200 million people worldwide (Behrman et al, 2005). Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency is one of the most common inherited hemolytic disorders occurring among humans. Data from the low-to middle income countries are limited.

AIMS AND OBJECTIVES

To find out the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of neonates admitted in Rockland Hospital, Delhi.

MATERIALS AND METHODS

Study Setting and Period of Study: The study was conducted in the Department of Paediatrics, Rockland Hospital, Delhi, India during the period of 01 January 2012 to 07 August 2014.

Study Design: The study was a Hospital Based Study, conducted in the Department of Paediatrics, Rockland Hospital, Delhi.

Sample Size: For the present study, blood samples of a total of 300 neonates were recorded and studied.

Sampling Design: The study was done as Random Sampling of the neonates that were admitted in the Department of Paediatrics, Rockland Hospital, Delhi.

Inclusion Criteria/ Selection Criteria

Participants in the study eligible for inclusion were:

- Neonates of either sex upto 28 days of age.

Neonates were included after obtaining proper informed written consent from their parent / guardian. Participants were included only if the neonates were admitted in the Department of Paediatrics, Rockland Hospital, Delhi, India.

Study Characteristics: In this study, the blood samples of 300 neonates were evaluated for the Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency. The demographic information, history, physical examination and presence/absence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in the patient's questionnaire was recorded. In this study, the blood samples from neonates were collected under all aseptic procedures.

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Neonates that satisfied the inclusion criteria were selected and the neonates who did not meet the inclusion criteria were excluded.

Data Collection Methods and Tools: Patients' history information was collected in questionnaires and the data were collected and reported.

RESULTS AND OBSERVATION

The prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of 300 neonates admitted in Rockland Hospital, Delhi was nil (0%).

DISCUSSION

In this study, it is evident that the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of 300 neonates admitted in Rockland Hospital, Delhi was nil (0%).

Following studies partly support our observations:

- A systematic search of published literature was undertaken and the wide variability of G6PD deficiency has been observed ranging from 0% - 30.7% among the different caste, ethnic, and linguistic groups of India. It was observed that the incidence of G6PD deficiency was found to be considerably higher among the tribes (9.86%) as compared to other ethnic groups (7.34%) and significantly higher in males as compared to females (I. I. Shah et al, 2018).
- From 522 randomly selected cord blood samples in King Chulalongkorn Memorial Hospital, Bangkok, Thailand, it was found that 11.1% of Thai male and 5.8% of female were identified as G6PD deficiency by PCR method (Nuchprayoon et al 2002).
- 148916 subjects in 36 primary studies which entered this meta-analysis were examined. G6PD deficiency prevalence was 6.7% in Iran (men: 8.8% and women: 2.2%). Also, this deficiency in the present study was four times higher in men than in women (Mahmood Moosazadeh, et al 2013).
- Low prevalence rates of G6PDd were documented in Argentina, Bolivia, Mexico, Peru and Uruguay, but studies from Curaçao, Ecuador, Jamaica, Saint Lucia, Suriname and Trinidad, as well as some surveys carried out in areas of Brazil, Colombia and Cuba, have shown a high prevalence (> 10%) of G6PDd. (Wuelton M Monteiro, et al 2014).

Summary: In this study, the aim was to find out the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of neonates admitted in Rockland Hospital, Delhi. In this study, the blood samples of 300 neonates were evaluated. Neonates that satisfied the inclusion criteria were selected and the participants who did not meet the inclusion criteria were excluded. Patients' history information was collected in questionnaires and Data were collected and reported. In this study, the results showed that the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of 300 neonates admitted in Rockland Hospital, Delhi was nil (0%).

Conclusion

From this study, it is concluded that the prevalence of Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency in a group of 300 neonates admitted in Rockland Hospital, Delhi was nil (0%).

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