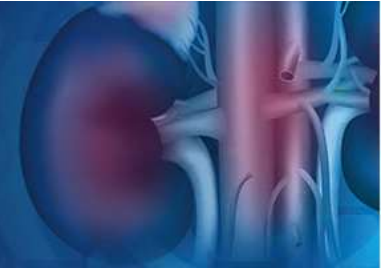


International Journal of Nephrology Research



ISSN Print: 2664-6692
ISSN Online: 2664-6706
IJNR 2024; 6(1): 10-13
www.nephrologyjournal.in
Received: 11-12-2023
Accepted: 16-01-2024

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affiliations are given below,
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Epidemiological and prognostic profile of anuria in neonatology at the Donka national hospital, Chu de Conakry (Guinea)

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DOI: <https://doi.org/10.33545/26646692.2024.v6.i1a.9>

Abstract

Aim: Was to determine the prevalence and prognosis of anuria in neonates.

Materials and Methods: This was a prospective, cross-sectional, descriptive study covering a 6-month period, from November 15, 2017 to May 14, 2018; we carried out an exhaustive recruitment of all newborns admitted or hospitalized in the department and included those aged 0 to 28 days who presented with anuria for 24 h or with a diuresis of less than 1ml/kg/h during 24 h.

Results: during the six (6) months, we recorded 21 cases of anuria out of a total of 1123 newborns, i.e. 2%; newborns born from D0 to D7 were the most numerous, i.e. 80.95%; we noted a predominance male, i.e. 52.38% with a sex ratio of 1.1; Birth weights under 2500 g were the most common, 57.14%; vomiting and hyperthermia were the main associated signs, respectively 61.90%; 52.38%. The most common etiology was severe dehydration (61.90%). Treatment was rehydration and antibiotics in 100% of cases. The mortality rate was 14.29%.

Conclusion: anuria in newborns is most often responsible for acute functional renal failure, requiring emergency management with rehydration and etiological treatment to reduce mortality.

Keywords: Anuria, newborns, neonatology, Donka

Introduction

Neonatal kidneys are particularly sensitive to hypoperfusion; anuria is defined as the absence of urine production for 24 hours, or urine production of less than 1ml/kg/h in infants ^[1]. The causes of acute renal failure can be multifactorial ^[2,3].

In most studies, perinatal asphyxia and sepsis are the main causes of acute renal failure in neonates, followed by respiratory distress syndrome, dehydration, congestive heart failure and nephrotoxic drugs ^[4].

Worldwide, of the 130 million children born each year, 4 million die within the first four weeks of life ^[5]. Neonatal mortality remains 10 to 15 times higher in developing countries than in developed countries, with 99% of newborns dying because of limited resources ^[6,7].

In our current context, most newborns and children suffering from renal failure die for lack of specialized care, including dialysis.

The aim of this study was to determine the epidemiological and prognostic profile of anuria in newborns in the Neonatology Department of Donka Hospital.

Materials and Methods

This was a prospective, cross-sectional and descriptive study covering a period of six (6) months, from November 15, 2017 to May 14, 2018; we proceeded to an exhaustive recruitment of all newborns admitted or hospitalized in the department and we included those aged 0 to 28 days who presented anuria for 24h or having a diuresis of less than 1 ml/kg/h during 24 h. Diuresis was quantified using an estimation method based on the parents' questioning at reception, using jars with graduations of less than 100 ml, 100 ml, 200 ml, 250 ml, 300 ml and 500 ml. The variables studied were: age, sex, birth weight, reasons for consultation, consultation times, etiology, treatment and evolution.

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Our data were entered and analyzed in SPSS v20.

Results

During the six (6) months, we recorded 21 cases of anuria out of a total of 1123 newborns, i.e. 2% (Figure 1). The mean age of patients was 5.47 ± 0.60 days, with extremes of 1 and 28 days (table 1). Males predominated, at 52.38%, with a sex ratio of 1.1 (table 1).

Those under 2,500g birth weight were the most represented, at 57.14%. Clinical signs and consultation times are illustrated at (table 1). The most common etiology was severe dehydration (61.90%) (Figure 2). Progression was favorable in 86% of cases (Figure 3).

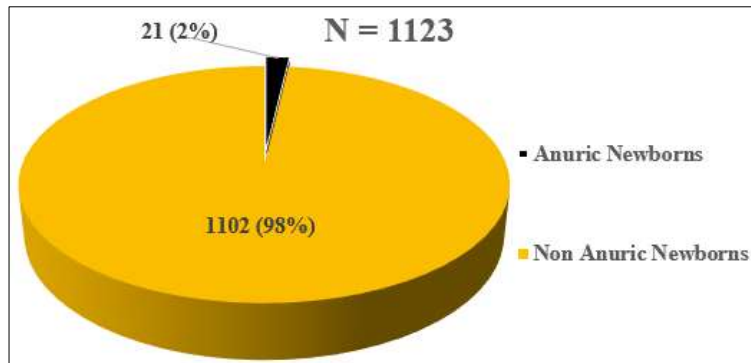


Fig 1: Frequency distribution of anuria in newborns

Table 1: Distribution of anuric newborns according to epidemiological and clinical variables

Variables	Workforce	Percentage (%)
Sex (Sex ratio M/F=1.1)	Male	52,38
	Female	47,62
Age range	J0 - J7	80,95
	Mean age= 5.47 ± 0.60 days Extreme from 1 to 28 days	
Birth weight	<2500g	57,14
	Average weight = 2222.38 ± 747.64 g Extreme of 1170 and 3600g	
Clinical signs	Vomiting	61,80
	Skin folds	61,80
	Hyperthermia	52,38
	Convulsion	23,80
Consultation period	24 heures	19,05
	48hours	42,86
	72 hours	23,81
	More than 72 hours	14,28

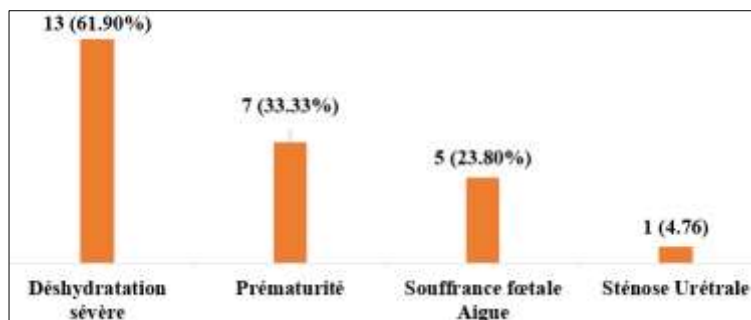


Fig 2: Distribution of anuric newborns by etiology

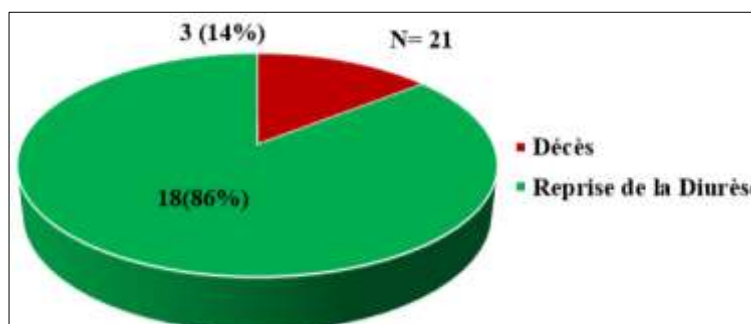


Fig 3: Distribution of anuric newborns according to clinical course

Discussion

In terms of frequency, our result is lower than that found by Agras *et al.* in 2004 in Turkey and by Csaicsh *et al.* in 2008 in Austria^[8, 9], i.e. frequencies of 3.4% and 4.5% respectively of anuria in neonatal intensive care units. The literature reports a frequency of 3.4% to 24% of neonatal renal failure^[12].

According to sex, our result is comparable to that of Csaicsh *et al.* in 2008 in Austria^[8] who found a predominance of the male sex with a sex ratio of 1.28.

Depending on the age group, our result is lower than that of Agras *et al.* in 2004 in Turkey^[9], who found in their series a mean age of 6.2 days.

According to birth weight, Agras *et al.* in 2004 in Turkey^[9] found an average weight of 2863 g.

According to signs, Agras *et al.* in 2004 in Turkey^[9] found in their study that oliguria was the clinical sign most frequently found in 34.6% of patients.

In terms of consultation delay, our results do not reflect the normal delay, as most young mothers only consult us if their digestive symptoms persist, and these were early-onset.

According to etiology, Csaicsich *et al.* found infection to be the cause of anuria in 43.75% of their series; Fakhrossadat *et al.*^[12] found asphyxia in 29.8%, sepsis in 28.5%, and dehydration in 24.2%.

Agras *et al.*^[9] observed a 24.4% mortality rate, while Fakhrossadat *et al.*^[12] found a mortality rate of 20.5%.

As in the literature, the mortality rate remains high in neonatology, especially for pathologies associated with anuria^[10].

Conclusion

Anuria in newborns is most often responsible for acute functional renal failure, requiring emergency management with rehydration and etiological treatment to reduce mortality.

Acknowledgement

With this article, we would like to thank our dear master, professor Mohamed Lamine Kaba, for his efforts to improve the scientific quality of this work.

Conflict of interest disclosure

The authors declare that there were no conflicts of interest in the preparation of this paper.

Declaration of informed consent

All authors appearing in this article equally share and agree to the publication of this article in your journal.

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How to Cite This Article

Bangoura S, Diallo AY, Kaba F, Camara MLT, Barry KMB, Diakite F, *et al.* Epidemiological and prognostic profile of anuria in neonatology at the Donka national hospital, Chu de Conakry (Guinea). International Journal of Nephrology Research. 2024;6(1):10-13.

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