

SCIENTIFIC LETTER

Neonatal visits to the Pediatric Emergency Department of a tertiary hospital: changes over the last 20 years

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INTRODUCTION

Neonatal patients are particularly vulnerable, facing potential complications inherent to this early stage of life, beyond their presenting concerns. Consequently, when using the five-level triage system in the Pediatric Emergency Department (PED), they are often assigned to higher urgency categories, such as levels 2 (emergency) and 3 (urgent). However, studies indicate that a considerable proportion of neonatal PED visits involve non-urgent conditions or parental concerns that could be effectively addressed in other healthcare settings⁽¹⁻⁵⁾. Most of these studies were conducted over five years ago and in different settings. Recent developments, such as the implementation of early discharge protocols in maternity wards⁽⁶⁾, changes in maternal demographics (an increase in late primiparous women⁽⁷⁾, more pregnancies achieved through assisted reproduction^(8,9), and a growing immigrant population⁽¹⁰⁾ ...) and the appearance of the SARS-CoV-2 pandemic⁽⁴⁾, may have influenced the frequency and reasons for neonatal visits to PEDs.

In 2003, a review of the reasons for neonatal visits was conducted in our PED⁽⁵⁾, and the aim of the present study

was to analyze the changes in the patterns of these visits 20 years later.

We present a descriptive-observational study conducted in the PED of a tertiary-level maternal and child hospital in Barcelona. The study included neonatal visits (patients under 29 days of age) managed in 2022. Patients seen only by the Surgery and Traumatology Departments were excluded. After receiving approval from the Hospital Ethics Committee (PIC-161-22), the electronic medical records of the patients were reviewed. The data were then compared with those from the 2003 study⁽⁵⁾. In both periods, the data extracted were analyzed using the IBM® SPSS® Statistics for Windows® software. Tests were applied to assess data distribution (Kolmogorov-Smirnov), compare quantitative data (Student's t-test, Mann-Whitney U test), and compare qualitative data (χ^2 , contingency table, Fisher's exact test). P-values of < 0.05 were considered significant.

In 2022, a total of 95,054 pediatric visits were attended in the PED, of which 1,737 (1.8%) were for neonates. These visits corresponded to 1,486 patients, with a return visit rate of 14.5%. The mean age was 14.7 ± 7.7 days (421 [24.2%] ≤ 7 days, 478 [27.5%] 8-14 days, 414 [23.8%] 15-21 days, and 424 [24.4%] 22-28 days); 933 (53.7%) were male. In 309 (17.8%) cases, the neonates had been previously seen by another physician who referred them to the PED for evaluation. The distribution of visits by day and month was fairly homogeneous. As for the time of day, 473 (27.2%) visits occurred between 06:00 and 14:00, 832 (47.9%), between 14:00 and 22:00, and 432 (24.9%) between 22:00 and 06:00. The most frequent reasons for visits were upper respiratory tract symptoms (207; 11.9%) and crying/irritability (194; 11.2%). A diagnostic test was performed in 855 (49.2%) cases. The most frequent diagnoses at discharge from the PED were upper respiratory tract infection (247; 14.2%) and jaundice (147; 8.5%), while in 305 (17.6%) cases no disease was found. There were 404 (23.3%) admissions, mainly for bronchiolitis (117; 29%). The proportion of patients admitted was higher

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TABLE 1. Comparison of the characteristics of neonatal visits between 2003 and 2022.

Characteristics	2003 (n= 1481)	2022 (n= 1737)	p
Age ≤ 7 days	17.7%	24.7%	< 0.001
Male sex	53.7%	53.7%	1
Referred by another physician	24.5%	17.8%	< 0.001
Time 14-22 h	43.3%	47.9%	0.009
Diagnostic studies	45.9%	49.2%	0.061
Blood analysis	28.2%	24.9%	0.035
Urinalysis	29.7%	23.5%	< 0.001
CSF analysis	10.3%	6.2%	< 0.001
Chest X-ray	14.7%	1.7%	< 0.001
Respiratory virus testing	12.2%	22.9%	< 0.001
Hospital admission	26%	23.6%	0.072

among referred patients (45.4% vs. 18.3% of those who came on their own initiative; $p < 0.001$).

Compared to 2003, no significant differences were observed in the prevalence of neonatal visits (1.9%; $p = 0.256$), the rate of return visits (15.8%; $p = 0.301$), or the proportion of admissions among referred patients (40.7%; $p = 0.222$). Table 1 and Figure 1 present the comparative clinical-epidemiological characteristics of the patients across the two periods.

This study shows that neonatal visits continue to be frequent in the PED, with an increase parallel to that of the total number of PED visits, contrasting with the decline in the birth rate in our country in recent decades⁽¹⁾. One possible cause could be the increased difficulty of accessing primary care centers in 2022 due to the SARS-CoV-2 pandemic⁽⁴⁾, which would also explain the decrease in the number of patients consulting their family physician. Likewise, the widespread practice of early discharge from maternity wards may have contributed to this. There was a notable increase in the number of visits during the first week of life, as well as in the number of visits in which no disease was detected. With a shorter hospital stay, families may receive less training in the care of healthy newborns, and in the event of any concerns, their anxiety may increase, prompting them to consult a healthcare professional.

On the other hand, a redistribution of reasons for visits, admissions, and discharge diagnoses was observed, with an increase in respiratory diseases, likely also a consequence of the SARS-CoV-2 pandemic⁽⁴⁾. The changes in the number and types of diagnostic investigations detected would align with this trend.

The main limitations of the study are related to its retrospective and single-center design.

In conclusion, the increase in the number of visits during the first week of life and in visits where no objective disease was identified should be noted. These trends may be related to early discharge from maternity wards and concerns regarding basic neonatal care.

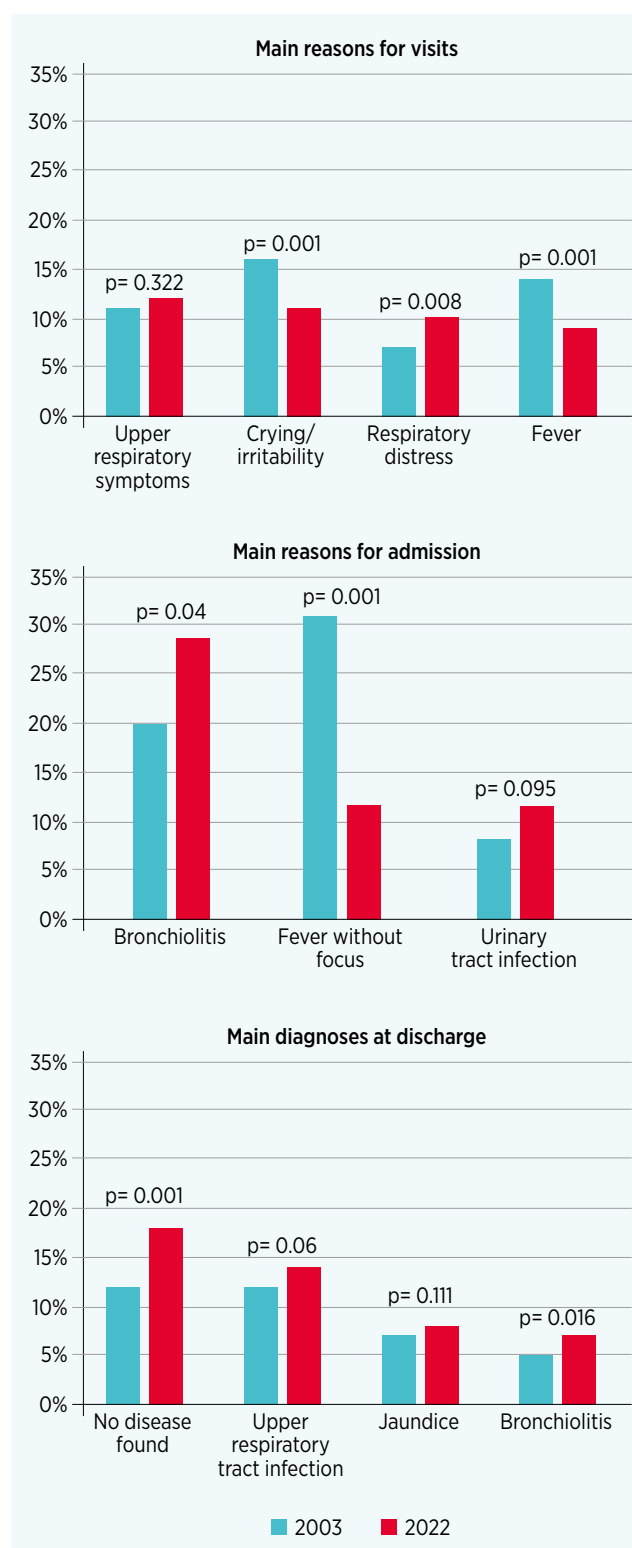


FIGURE 1. Comparison of the main reasons for visits, reasons for admission, and discharge diagnoses of neonates seen in the Emergency Department between 2003 and 2022.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest and have not received any funding related to the work undertaken.

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