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ORIGINAL ARTICLE

Clinical and demographic profile of the pediatric ward in a University Hospital

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Abstract

Objective: To evaluate the clinical and demographic profile of children hospitalized in the pediatric ward of a university hospital, from January 2014 to December 2015. **Methods:** A retrospective, qualitative study was carried out in the database of the university hospital, based on medical records of hospitalized patients. Age; gender; pre-existing diseases, current diagnosis, time of hospitalization, number of previous hospitalizations, and outcomes were the study variables. A descriptive analysis was performed, with tables of absolute and relative frequency. **Results:** A total of 746 hospitalizations of 509 patients were analyzed. The mean age was 5 years and 8 months, 57.6% were male, and the mean time of hospitalization was 5.68 days. Most hospitalizations (86.5%) were due to clinical diagnosis, which resulted in a larger hospitalization period (6,17 days) compared to surgical cases (2,54 days). Most of patients (82.91%) were hospitalized only once. About 42% had at least one pre-existing disease. Patients with more than one hospitalization were more likely to have previous diseases than those hospitalized only once (87.35% versus 37.21%). **Conclusion:** The cohort of patients hospitalized in the pediatric ward studied is predominantly composed of young children, with clinical diagnosis and good results. This profile varies with the complexity of the services and the specialties offered, and it should be known by each institution, in order to offer the best assistance and teaching.

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INTRODUCTION

Regarding public health, health policies, and health education, knowledge about hospitalizations in childhood is considered of substantial importance because children tend to exhibit greater vulnerability to certain diseases, which can affect their growth and development.[1] Therefore, evaluation of their living and health conditions is essential in planning health actions starting from primary care and establishing learning objectives for undergraduate and graduate health programs.[1]

As in other developing countries, until a few years ago, pediatric hospital care in Brazil targeted the treatment of acute diseases, particularly those of an infectious origin.[2] However, this situation has changed in recent years considering that the need for hospitalization due to infectious diseases has decreased due to better living conditions and greater access to health resources.[1,2] Moreover, considering the changes in social dynamics and adoption of technologies that lead to greater survival, the demand for chronic disease care has increased.[2]

Characterization of patients hospitalized in pediatric wards can provide useful information to determine the inherent risks in different age groups, facilitating expansion of specific health programs for each age group.[3] Moreover, the information collected may indicate the prevalence of clinical conditions that could be assessed in primary care; improvement of the services offered at this level of care could decrease the chances of hospitalization.[4,5] Furthermore, although the observed changes in morbidity and mortality patterns in childhood and adolescence are well described, few studies have described the clinical and demographic profiles of pediatric hospitalized patients in Brazil.[2] Such studies would be important to facilitate reorganization of pediatric services with the aim of providing an adequate structure, resources, and work processes for the management, treatment, and monitoring of this population.[4] In addition, knowledge of these conditions may contribute to the development of effective measures for the prevention of more severe outcomes related to childhood illnesses.[6]

Thus, the aim of this study was to assess the clinical and demographic profiles of children hospitalized at the Pediatric Ward of the University Hospital of the Federal University of Juiz de Fora (HU-UFJF) from January 2014 to December 2015.

MATERIALS AND METHODS

This retrospective, quantitative study was conducted using the database of HU-UFJF, Juiz de Fora, Minas Gerais, Brazil. HU-UFJF is a public institution managed with resources from the federal and Brazilian Unified Health System, with a service coverage area that includes more than 90 municipalities in the surrounding Zona da Mata region and the nearby areas of Rio de Janeiro.

The study used the information obtained from the medical records of patients admitted to the pediatric ward from January 2014 to December 2015. All patients admitted to the hospital during this period were considered eligible for the study. Patients whose files could not be located for any reason or whose data were incomplete or unreadable were excluded because it was deemed impossible to retrieve their information.

The following variables were assessed: age, sex, city of origin, pre-existing diseases (e.g., chronic conditions, congenital malformations, and genetic diseases), reason for current hospitalization, length of hospital stay, number of previous hospitalizations, and outcome of hospitalization (discharge, transfer, or death).

The information retrieved was organized in an electronic database in Microsoft Excel 2013, Windows and was subjected to a descriptive analysis mediated by absolute and relative frequency tables. The project was approved by the Research Ethics Committee of HU-UFJF (CAAE No. 54706116.8.0000.5133).

RESULTS

A total of 746 hospitalizations of 509 patients during the study period were analyzed, and 14 incomplete records were excluded. The mean age of hospitalized patients was 5 years and 8 months (range: 3 days to 17 years), and 57.6% of the patients were male. Majority of the patients hailed from Juiz de Fora (64.08%) and other cities in the Zona da Mata region (33.91%).

Of 746 hospitalizations, 86.5% (n = 645) were hospitalized due to clinical conditions and 13.5% (n = 101) for a surgical procedure. Regarding clinical admissions, the mean length of stay was 6.17 days (range: 1–96 days), and regarding surgical admissions, the mean length of stay was 2.54 days (range: 1–13 days). Further, the mean overall length of hospital stay was 5.68 days (range: 1–96 days).

Of 509 patients, 82.91% were admitted only once, whereas the remaining patients (17.09%) had more than one hospitalization (mean: 3.72, range: 2–24 admissions) during the study period. Approximately 42% (n = 211) of the patients had at least one pre-existing disease prior to the illness that led to the current hospitalization. Table 1 presents the main comorbidities and their frequencies in the 211 patients included in the study. Patients with more than one hospitalization had a history of illnesses more often than those who were hospitalized only once (87.35% vs. 37.21%).

Table 2 presents the most frequent diagnosis categorized by groups of pathologies. The vast majority of patients completed their treatment and were discharged (95.31%). Notably, no deaths were recorded during the study period, and the remaining patients were transferred to another institution or discontinued treatment (4.42% and 0.27%, respectively).

Table 1. Most frequently affected system in the 211 hospitalized patients with pre-existing pathologies

Comorbidities	n	%
Multiple systems	35	15.1
Respiratory	32	13.8
Hematological	28	12.1
Gastrointestinal	24	10.3
Neonatal period[1]	21	9.1
Urological	18	7.7
Nephrological	15	6.5
Neurological	14	6.0
Cardiological	10	4.3
Others	35	15.1

[1]Typical comorbidities observed during the neonatal period that affect different systems

Table 2. Diagnoses that caused the hospitalizations categorized by groups of pathologies

Groups of pathologies	Non-infectious		Infectious	
	n	%	n	%
Gastrointestinal	109	14.7	17	2.3
Respiratory	49	6.6	76	10.2
Genitourinary	56	7.5	8	1.1
Neurological	35	4.7	6	0.8
Dermatological	7	0.9	18	2.4
Immunodeficiency	82	11.0	-	-
Hematological	60	8.0	-	-
Nephrological	27	3.6	-	-
Rheumatological	19	2.5	-	-
Neoplastic	16	2.1	-	-
Cardiac	16	2.1	-	-
Endocrinological	9	1.2	-	-
Others	136	18.3	-	-
Total			746	100.0

DISCUSSION

In the present study, a predominance of male children (57.6%) was observed among the hospitalized patients, consistent with the rate reported by most sources retrieved regarding other hospitals of the South Region and Southeast Region of Brazil.[1,3,5]

The mean age of the children admitted to this hospital was 5 years and 8 months, indicating a predominance of younger children, consistent with the age reported in other studies.[3,4] In a study conducted at the Nova Iguaçu General Hospital (Rio de Janeiro Metropolitan Region), Costa et al. (2015) reported a mean age of 5.7 years, similar to that reported in the present study.[7]

Regarding the city of origin, there was an absolute predominance of patients from Juiz de Fora and the Zona da Mata region. It should be noted that Juiz de Fora is an important population center with good medical resources, and it provides services not only to its citizens but also to those of the entire region.

Although most hospitalizations were due to clinical conditions, the percentage of those hospitalized for surgical procedures (13.5%) was not negligible. It is important to note that HU-UFJF is a reference hospital for surgery in the specialties of pediatric urology and otolaryngology; this fact should be considered when analyzing these data. Moreover, unlike the case reported by Silva et al. (2016), HU-UFJF does not have distinct wards for clinical and surgical cases.[4] The mean time of hospitalization was 5.68 days, similar to that found in the literature.[5] Surgical cases, when analyzed separately, had a much shorter length of hospital stay than expected owing to the predominance of low-complexity procedures.

Regarding diagnoses that led to hospitalization, contrary to the findings of most retrieved studies, a predominance of gastrointestinal causes was observed. The literature indicates respiratory system diseases to be the leading cause of hospitalization.[1,3,4,5,8,9] In addition, immunodeficiency was frequently observed in children admitted to HU-UFJF. This finding can be explained by the presence of a congenital immunodeficiency clinic, which is becoming a regional reference; this validates the high prevalence of this diagnostic category among the causes of hospitalization.

Among the children assessed during the study period, 82.91% had a single hospitalization and 17.09% had more than one hospitalization (range: 2–24). In their study, Duarte et al. (2012) observed a high frequency of readmissions associated with referral by specialized outpatient clinics of the studied units.[2] Notably, the patients with immunodeficiency from the aforementioned specialized outpatient clinic were hospitalized several times for treatment with intravenous human immunoglobulin therapy, which was not performed in a day-hospital regime during data collection.

Approximately 42% of the hospitalized patients had at least one pre-existing disease prior to the illness that led to hospitalization, a rate similar to that found in the literature (47.6%).[2] Moreover, the present study indicated that patients with more than one hospitalization are more likely to present prior comorbidities (87.35% vs. 37.28%); this finding, although unmatched in the retrieved studies, was expected because patients with chronic diseases tend to require a greater number of hospitalizations.[2]

Thus, it can be concluded that the profile of hospitalizations in the studied general pediatric ward is predominantly composed of young children, with pathologies requiring clinical treatment and good postoperative evolution, although the surgical cases were not negligible. Furthermore, the presence of comorbidities was very frequent, which can have implications in terms of readmissions, length of stay, cost, and complications.

This profile certainly varies among hospitals according to the degree of complexity of the services and specialties offered. Therefore, it is important that each university hospital recognizes its profile to be able to offer the best care and teaching as possible.

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