

## SHORT STAY UNIT IN THE EMERGENCY DEPARTMENT IN THE CHILDREN HOSPITAL OF RABAT: WHICH INTEREST?

N.Al Kadaoui<sup>1\*</sup>, N.Mekkaoui<sup>2</sup>, L.Karboubi<sup>3</sup>, Badr Sououd Benjelloun Dakhama<sup>4</sup>

<sup>\*1234</sup>*Pediatric emergencies department Children Hospital in Rabat*

**\*Corresponding Author:-**

Email: [Kanihal84@hotmail.com](mailto:Kanihal84@hotmail.com)

---

### **Abstract:-**

**Objective:** *to establish an epidemiological profile of children admitted in the short-stay unit, to describe the different missions and activities carried out, to identify the main pathologies in this unit and to study the relevance of admissions. Materials and Methods: retrospective descriptive study of admitted children in the observation room of the Pediatric Emergencies in Rabat during 2012. The main elements studied were: the age, the sex and the origin of patients, the reason for admission, length of stay, paraclinical tests and medical treatment.*

**Results:** *the observation room received 9.5% of the Children Hospital of Rabat's (CHR) admission in 2012. The average age of patients was 4 years 8 months, 39% of which were infants, the average length of stay being less than 24 hours. The most common diagnoses were seizures, poisoning and Pyelonephritis*

**Key words:** *Stay short Unit, average length of stay, emergency, management of the patients.*

## INTRODUCTION :-

Emergency management is a very sensitive issue in the organization of the health system. Emergency Department crowding and a prolonged waiting times for patients may lead to a lower quality of care and increased mortality rates [1]. The concept of Short stay unit was born in the USA during the 80's. [2] It is a ward providing targeted care for patients requiring brief hospitalization and dischargeable as soon as clinical conditions are resolved with the aim of limiting inappropriate hospitalizations [3] and improving the quality of management of patients with acute diseases [4]. SSU has been an integral part of emergency department's reception and treatment in France since 1995. [5] In the pediatric emergency department (PED) of CHR, an observation room with four beds was created in 2010, to evaluate the benefits of a short stay unit in pediatric emergencies.

The years 2010-2011-2012 were marked, apart from the usual activity of the PED, by the development of rapid diagnosis, management of urgent patients requiring an acute care in the observation room.

## Methodology

A retrospective descriptive study of all patients managed in the observation room in the PED throughout 2012, a unit created in 2010, with 4 beds, a pediatric doctor available 24 hours a day, to evaluate the benefits of the short stay unit. The inclusion criteria were: the age between 3 months and 15 years old, requiring an acute care. Exclusion criteria were: newborns and infants less than 3 months of age and patients admitted for known chronic diseases. The main elements studied were: the age, the sex and the origin of the patients, the reason for admission, length of stay, paraclinical tests and medical treatment. 575 cases were examined. The data was collected on Excel and analyzed on SPSS 22.0

## Results

From January 1st to December 31st, 2012, 575 patients were managed in the observation room, that being 9.5% of the total PED admissions: 10334.

**Epidemiology:** The mean age of the patients was 4 years 8 months with extremes of 4 months and 16 years. Infants accounted for 39% of admissions, 28.6 % between 2 and 6 years old, 14.9 %: 6 and 12 years old and 17,3 % were between 12 and 16 years old. The sex-ratio was 1.07. 58% of patients were from Rabat and 88% from Rabat-Salé-Zemmour-Zair Region.

**Admissions:** The average length of stay was 28 hours with extremes of 8 hours and 36 hours. 80% stayed less than 24 hours. More than 79% were self-referred. The most frequent diagnoses were seizures, poisoning, Pyelonephritis and animal bites and stings (Fig4) with frequency difference according to age (Tab1) and seasons (Tab2). The review of admission criteria indicated that more than 97% of these admissions were justified. The paraclinical tests have been made were : 190 C-reactive protein, 156 complete blood counts, 139 lumbar puncture, 96 cytobacteriological examination of urine, 89 chest X-rays and 38 brain ct scans. They were justified according to clinical symptoms. The clinical course was benign in most cases. 5 patients were deceased (0.86%): 2 of them because of an acute respiratory distress syndrome and 3 because of septic shock. 10.6% of patients were transferred to an inpatient ward (including 3% to pediatric intensive care unit).

**Table 1: The most common reasons of admission at the observation room by age**

	Infants	2-6 years old	7-12 years old	More than 12 years old	Total	%
<b>Seizures</b>	97	34	6	2	139	24
<b>Poisoning</b>	83	85	12	36	216	37,5
<b>Pyelonephritis</b>	21	16	5	0	42	7,3
<b>Animal bites &amp; stings</b>	12	19	14	11	56	9,7

**Table 2: The most common reasons of admission at the observation room by season**

	Autumn	Winter	Spring	Summer	Total
<b>Seizures</b>	17	47	44	31	139
<b>Poisoning</b>	41	63	59	53	216
<b>Pyelonephritis</b>	10	6	13	13	42
<b>Animal bites and stings</b>	13	7	8	28	56

From the above, it is obvious that only 27% of the respondents do hygienic practices relating to child health care and overwhelming majority of them (73%) do not follow hygienic health care practice for their children. 23%, 11%, 16%, and 8% of the respondents wash hands with soap before eating, use tissue in the toilet, wash hands with soap after toilet, and wash hands before preparing food respectively. The percentages of not using showed in the above table is alarming and which can affect child health severely. Furthermore, 45% of the respondents do not wash plates using soap or other liquid while majority of the respondents use soap or liquid for washing plates.

## Discussion and conclusion

An SSPAU is a facility within which children with acute illnesses can be assessed, investigated, observed and treated without recourse to inpatient areas, [6] it enables automatic inpatient admission to be avoided [3] and improves the quality of management of patients with acute diseases [4].

In our study, we investigate the interest of the SSU in pediatric emergencies: a medical facility known for daily congestion of patients, sometimes due to parental fears, leading to a long waiting time, many admissions and high cost to both parents and the hospital.

In the University General Hospital of Valencia, the SSU ensure the admission of 15% of the emergency department attendance [7] this percentage is among the highest in Spain [8-10] in our study, the observation room of PED has received 6.64% of the total of patients attended in emergency department (687/10334). It was about 15% in the Pediatric SSU of the University Hospital of Lille in 2003 [11], 4% in a North American survey [12] and 15% in an Australian study [13]. In 2005, at the Pediatric Emergency Department of the Children's Hospital in Birmingham, a study showed that the SSU admitted 10% of the total was 28 hours with extremes of 8 hours and 36 hours. 80% stayed less than 24 hours. At the of the hospital admissions which was 43000[14]. In our study, the average length of stay Pediatric Emergency Department in Nice, a study showed that the wait time to see the doctor was satisfactory for 85% of the parents [15]. In 2001, Martinol and students have compared, in a prospective study, the management of acute diarrhea in children between six emergency departments without SSU and a pediatric SSU with a pediatrician available 24hours a day.

The length of stay has fallen by 65%, peripheral venous catheter placement by 58 % and blood tests by 66 % [16].

In France, in 2004, in absence of SSU,  $87 \pm 10$  % would have been hospitalized,  $11 \pm 9$  % would have been waiting and only  $2 \pm 3$  % would have returned home [17]

The overall length of stay for pediatric hospital admissions in England has fallen thanks to the SSU, with many children staying under 24 hours in hospital [18-19]. In the observation room of the PED, the average length of stay was 28 hours with extremes of 8 hours and 36 hours. 80% stayed less than 24 hours.

In our study, the most common reasons for admission in the SSU were seizures, poisoning, Pyelonephritis and animal bites and stings. In the literature, the most diagnoses admissions are fever, respiratory infections, particularly infectious, gastrointestinal symptoms, intoxications and other accidents and neurological diseases. [13, 20]

Over one third of patients managed in the observation room have had a lumbar puncture and nearly all of them have had a peripheral venous catheterization and blood sampling to improve the children observation, investigation and treatment. This study confirms that the key benefit of an SSU is that patients can be managed and discharged earlier.

## References:-

- [1]. N.R. Hoot, D. Aronsky, Systematic review of emergency department crowding: causes, effects, and solutions, *Ann of Em Med* 52 (2008) 126-136
- [2]. Ross MA, Graff LG (2001) Principles of observation medicine. *Emerg Med Clin North Am* 19:1-17
- [3]. S. Daly, D.A. Campbell, P.A. Cameron, Short-stay units and observation medicine: a systematic review, *MJA* 178 (2003) 559-563
- [4]. M.E. Zonderland, R.J. Boucherie, M.W. Carter, D.A. Stanford, Modeling the effect of short stay units on patient admissions, *Operations Research for Health Care* (2015), <http://dx.doi.org/10.1016/j.orhc> .2015.04.001
- [5]. Boyeau-Desmarres • C. Roy • P.-M. Roy (2013). Les patient's admis en unité d'hospitalisation de courte durée révèlent-ils d'une valorisation financière de soins continus? *Ann. Fr. Med. Urgence DOI* 10.1007/s13341-013-0342-x
- [6]. *Short Stay Paediatric Assessment Units - Advice for Commissioners and Provider, January 2009. Royal College of Paediatrics and Child Health.*
- [7]. G. Sempere-Montes, M.Morales-Suarez-Varel, E.Garijo-Gomez, M.D. Illa-Gomez y P.Palau-Muñoz. Impacto de una unidad de corta estancia en UN hospital de tercer nivel. *RevClinEsp*.2010; 210(6):279-283.
- [8]. Juan A, Salazar A, Alvarez A, Perez JR, Garca L, Corbella X. Effectiveness and safety of an emergency department short-stay unit as an alternative to standard inpatient hospitalisation. *Emerg MedJ*.2006; 23:833-7.
- [9]. Guirao R, Sempere MT, Lopez I, Sendra MP, Sanchez J.Unidad medica de corta estancia ,una alternativa a la hospitalizacion convencional.*RevClinEsp*.2008;208:216-21.
- [10]. Gonzalez JJ, Fernandez C, Martin FJ, Gonzalez J, Lopez A, Elvira C, et al. Actividad de una unidad de corta estancia en urgencias de un hospital terciario: cuatro años de experiencia.*Emergencias*.2009; 21:87-94
- [11]. O. Martineau, A. Martinot, V. Hue, A. Chartier, A. Dorkenoo , D. Guimber, Utilité d'une unité d'hospitalisation de courte durée aux urgences pédiatriques. *Archives de pédiatrie* 10 (2003) 410-416.
- [12]. Wiley JF, Friday JH, Nowakowski T, Pittsinger-Kazimer L, Platt K, Scribano PV. Observation units: the role of an outpatient extended treatment site in pediatric care. *Pediatr Emerg Care* 1998;14:444-7
- [13]. Browne GJ. A short stay or 23h ward in a general and academic children's hospital: are they effective? *Pediatr Emerg Care* 2000;16:223-9
- [14]. Levett I, Berry K and Wacogne I. Review of a paediatric emergency department observation unit. *Emergency Medicine Journal*. 2006;23:612-613
- [15]. D. Demonchy\*, H. Haas, L. Gillet Vittori, I. Montaudie, C. Piccini-Bailly, A. Tran. Un circuit court pour dé-sengorger les services d'accueil des urgences pédiatriques Service des urgences pédiatriques, hopitaux pédiatriques de Nice, CHU Lenval, 2015
- [16]. A. Martinot1, V. Hue1, A. Ego1, A. Dumonceaux1, B. Grandbastien2, B. Guillois3, F. Leclerc1, et le Réseau interhospitalier d'évaluation des pratiques médicales dans les affections courantes de l'enfant. « Modalités de

- réhydratation des diarrhées aiguës du nourrisson à l'hôpital. Impact de la présence permanente d'un pédiatre et d'une structure d'hospitalisation de courte durée». *Arch Pédiatr* 2001 ; 8 : 1062-70
- [17]. uni, F.S. ChamoBrazi,D Mikou,N.Ouagued,P.Huvet.(2004). Service des Urgences-Smur, Centre Hospitalier Louis Giorgi, 84100 Orange. Evaluation de l'activité d'une UHCD à l'aide d'un dossier médical cible. 3èmes journées du COPACAMU, Marseille 19 et 20 Février 2004
- [18]. D H. Trends in children and young people's care: Emergency admission statistics-1996/7 and 2006/7, England. Department of Health. [http://www.dh.gov.uk/en/](http://www.dh.gov.uk/en/Publicationsandstatistics/Statistics/DH_08371) Publicationsandstatistics/Statistics/DH\_08371
- [19]. MacFaul R and Werneke U. Recent trends in hospital use by children in England. *Archives of Disease in Childhood*. 2001;85:203-7
- [20]. Stewart M, Werneke U, MacFaul R, et al. Medical and social factors associated with the admission and discharge of acutely ill children. *Archives of Disease in Childhood*.1998; 79: 219-24.