

Original Research Article

Study on demographic factors of discharge against medical advice in pediatric population

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ABSTRACT

Background: Discharge against medical advice (DAMA) is of serious concern among the pediatrics population. Parent(s)/guardians understanding about the disease and various other factors play role in their decision of DAMA. The aim of this study is to know the prevalence of DAMA in a tertiary care center and to observe the gender stratification in DAMA.

Methods: A retrospective survey of medical records of children discharge against medical advice during the period January 2017 to January 2019. Demographic data, length of hospital stay, clinical diagnosis and procedure refused was collected.

Results: Total 12977 were discharged during the study period of which, 387 children were DAMA, prevalence of DAMA was 2.9%, male to female ratio among DAMA patients is 1.2:1. The mean length of stay was 4.8 days. Among the DAMA patients' newborns were predominant (61.6 %), p value = 0.0001, highly significant. No significant difference with respect to age and gender (p value = 0.535). Out of 370 DAMA patients, 211 patients who required further investigations and procedure was refused by parents/guardians (p value = 0.0001) highly significant. Phototherapy refusal was most common among newborn (59.7%), followed by neuroimaging and lumbar puncture in children (10.9%).

Conclusions: DAMA was observed more among the newborns compared to infants, toddlers and children. Among newborns, phototherapy refusal was most common. In infants and children neuroimaging and lumbar puncture was the most commonly refused procedure. There was no gender bias.

Keywords: Discharge against medical advice, Hospital stay, Lumbar puncture, Newborns, Procedure, Phototherapy

INTRODUCTION

Discharge against medical advice is a situation where patients chooses to leave the hospital before attending physician recommends discharge.¹ It is of serious concern among the pediatrics population. It has a negative impact on the wellbeing of the patient. DAMA and its clinical, ethical and legal implications are of major concern for doctors. In pediatrics decision of DAMA is made by parent(s)/guardians and their understanding about the disease and various factors play role in their decision.

Often reasons parents claimed to justify DAMA are perceived improvement, financial problems and dissatisfaction with care provider, preference for traditional forms of treatment, and hopelessness of clinical situation.²

The prevalence of DAMA among pediatric population varies between the countries and even within the country, worldwide accounts to 1-26%, among children DAMA was mainly reported in children under 1 year of age followed by children aged 1-5 years of age.³ DAMA rates

reported among the pediatric centers in Iran accounts to 5.3%, in Singapore it is 2%, in Nigeria it was 1.5 to 5.7%.⁴ It has been observed that patients who discharged against medical advice have higher chances of readmissions, prolonged hospital stay and worse health outcomes compared to the patients discharged conveniently.

There is limited data available on the gender-based disparities in the health care seeking behaviour. The major reason for the low girl to boy ratio (0.70) is the differential health care seeking behaviour between genders, relatively poorer nutrition, greater delay in receiving care, and lower access to preventive and curative care.⁵ It is documented from hospital based studies that the ratio of sick male to sick female newborn using the hospital care is 2:1.⁶

METHODS

It is a retrospective survey of medical records of patients discharged against medical advice in a tertiary care center (FMMCH, Department of pediatrics).

Study period was of 2 years from January 2017 to January 2019.

Inclusion criteria

All newborns and children admitted in pediatrics wards and ICU whose parents/guardians took discharge against medical advice.

Exclusion criteria

Children who were discharged on request, discharged and referred to another center.

Study population includes all newborns and children admitted in pediatrics wards and ICU whose parents/guardians took discharge against medical advice.

Statistical analysis of data using mean, chi square test.

RESULTS

During the study period, there were 13001 admissions under pediatrics department in FMMCH during the study period from January 2017 to January 2019. Out of the total admission, males were 7018 and female patients were 5983, male to female ratio was 1.1:1.

Figure 1 shows the DAMA gender analysis, the male to female ratio among DAMA patients was 1.2: 1 (p value = 0.017), significant.

Table 1 shows the age distribution of patients, newborns constituted 61.6% of DAMA population, (p value = 0.0001), highly significant. Followed by infants between 1 to 3 years of age accounted to 13 % of DAMA

population. No significant difference with respect to age and gender (p value = 0.535).

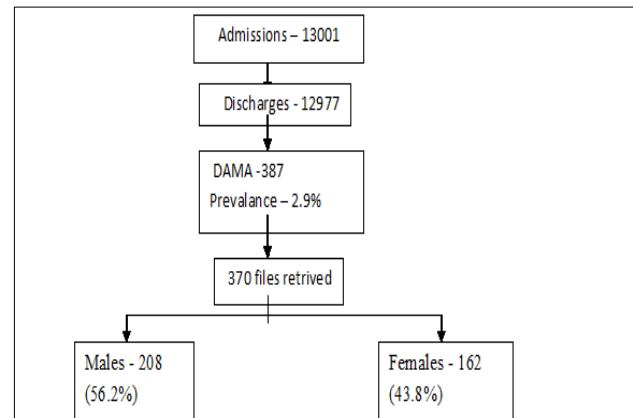


Figure 1: Flowchart of DAMA gender analysis.

Table 1: Age distribution of patients studied.

Age in years	Gender		Total
	Male	Female	
1 -28 days	129(62%)	99(61.1%)	228(61.6%)
29 days - 12 months	24(11.5%)	17(10.5%)	41(11.1%)
13 months - 36 months	30(14.4%)	18(11.1%)	48(13%)
37 months - 72 months	5(2.4%)	8(4.9%)	13(3.5%)
73 months - 120 months	7(3.4%)	10(6.2%)	17(4.6%)
121 months - 180 months	13(6.3%)	10(6.2%)	23(6.2%)
Total	208(100%)	162(100%)	370(100%)

The mean length of stay observed was 4.8 days, among males it is 4.7 days and among females it is 4.8 days as shown in (Table 2).

Table 2: Length of hospital stay distribution of patients studied.

Length of hospital stay	Gender		Total
	Male	Female	
1 day	37(17.8%)	29(17.9%)	66(17.8%)
2-5	120(57.7%)	103(63.6%)	223(60.3%)
6-10	39(18.8%)	16(9.9%)	55(14.9%)
11-30	11(5.3%)	11(6.8%)	22(5.9%)
>31 days	1(0.5%)	3(1.9%)	4(1.1%)
Total	208(100%)	162(100%)	370(100%)

In terms of diagnosis at discharge, 14 were surgical cases (hydrocephalus, congenital diaphragmatic hernia, cyanotic congenital heart disease, scalp abscess, choroid plexus papilloma, chiari malformation, meningomyelocele).

Statistically 228 were newborns and neonatal conditions included neonatal hyperbilirubemia accounting to 122 (53.5%), neonatal sepsis 28 cases, preterm/ low birth weight were 30, 7 cases of congenital heart disease, 2 cases of acute kidney injury, 3 cases of NEC, neonatal seizures 10, birth asphyxia 2, birth injuries 2, 6 cases of multiple congenital anomaly/ syndromic.

Among the medical conditions, CNS cases were 55 which included febrile seizures, meningitis, autoimmune encephalitis, CVS cases were 11 which included PPHN, ASD, VSD, PDA. Respiratory cases were 33 (included asthma, wheezy bronchitis, LRTI) GI systems cases were 10 (acute appendicitis, acute gastroenteritis, intestinal ascariasis, portal hypertension, 4 cases involved renal system (nephrotic syndrome, acute kidney injury), 13 cases of infection which included dengue, malaria, infectious mononucleosis, miscellaneous were 19 cases which included unknown bite, snake bite, turpentine consumption, nicotine gum consumption, 2 cases of hematooncology - infantile leukemia and lymphoma.

Among the 370 DAMA patients, 159 required no procedures or investigations, among the remaining 211 patients who refused investigations and procedure (p value = 0.0001) highly significant, 126 were requiring phototherapy, 57 patients refused neuroimaging and lumbar puncture, bone marrow biopsy and aspiration was refused by 4, 1 refused liver biopsy, 2 refused dialysis and 1 usg guided nephrostomy, 13 refused for mechanical ventilation and ventilator support, 9 refused surgery (I and D, CDH repair, meningomyelocele repair, 3 ventriculoperitoneal shunt, 1 withdrawal of care (Figure 2).

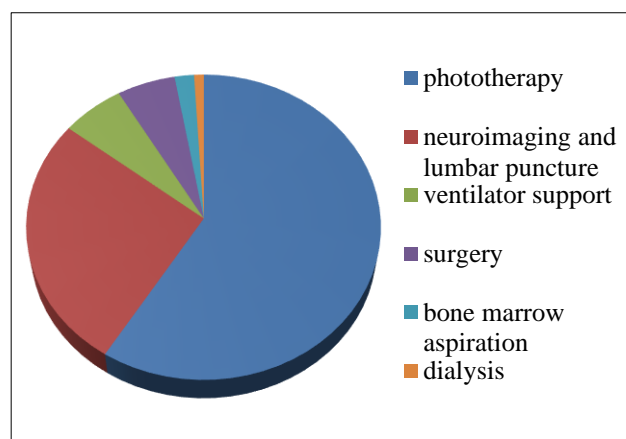


Figure 3: Procedures refused among DAMA patients.

DISCUSSION

DAMA among pediatric patients has clinical, ethical and legal implications. It is also associated with higher rates of readmission and complications. The prevalence of DAMA accounts to 2.9%. When compared to prevalence of 3.1% in a study done in Nigeria and 1.6% in a study discharge against medical advice among children in

Oman.^{4,7} The male to female ratio among DAMA patients is 1.2:1.

The mean length of stay observed in the study is 4.8 days longer than, compared to previous studies done in oman (3.1 days).⁷

Among the DAMA patients' newborns were predominant, accounted to 61.6% of DAMA and neonatal condition which are commonly associated with DAMA observed in this study were neonatal jaundice, sepsis, prematurity. Followed by newborns were children between 1 to 3 years of age and infants (1month - 1year) accounting to 13% and 11.1 % respectively. In all the age group DAMA in males is more than females except in 3-year 1month to 6 years of age were female are more than males.

"Discharge against medical advice in pediatric intensive care unit and subsequent events" was a retrospective study from the medical records of DAMA patients from PICU of Dr. Hasan Sadikin General hospital, Indonesia between April 2011 and April 2012. The characteristics of the study included gender, length of the stay, reasons for discharge against medical advice, parents' occupation, educational status and condition after discharged against medical advice. The study showed that among the 195 children admitted, DAMA patients were 12 of which 5 were boys and 7 girls with male:female ratio 1:1.4. the average length of stay of DAMA patients was 6.3(1-18) days.⁸

In a retrospective survey by Muna Al- Sadoon and Khalid Al- Shamousi, on paediatric DAMA in SQUH, a tertiary teaching hospital attached to the College of Medicine and Health sciences at Sultan Qaboos University, Muscat, Oman, the prevalence rate of DAMA was 0.32%. In 39.5% of the cases the discharge was taken within 24 hours of hospital admission. The majority of them were infants and children younger than 3 years of age. Female patients comprised of 60.5%(n=23) of the discharged patients. However, in 57.9 % of the cases, the reason for DAMA was not recorded.⁹

Ndu IK et al, conducted a retrospective study, "Discharge against medical advice (DAMA) among the pediatric age group in Enugu State University Teaching Hospital Parklane, Enugu". The study reviewed the medical records of children aged 1-17 years who were discharged against medical advice over 3-year period 2013-2015. Total of 5464 patients were admitted during the study period among them 170 patients took DAMA i.e. 3.1%. DAMA was more common among infants (45.6%). The most common condition contributing to DAMA was malaria (20.1%) followed by pneumonia (15.7%) and sepsis (12.3%). The commonest reason for DAMA was financial constraints.¹⁰

DAMA among children accounts to 38.4%. Majority being CNS cases (40.3%) which included simple febrile

seizures, meningitis, seizure disorder, hydrocephalus. Respiratory cases accounts to 21.7% which included wheezy bronchitis, acute exacerbation of asthma, otitis media.

Miscellaneous cases accounts to 12.1% included unknown bite, kerosene, turpentine oil consumption. Sepsis constituted 8.3%, CVS cases were 7%, GIT cases included 6.4%, 2.5% of renal cases, 1.2% of hematocology cases.

In this study out of 370 DAMA patients, 211 patients refused further investigations and procedures which includes neuroimaging and lumbar puncture, bone marrow aspiration, bone marrow biopsy, liver biopsy, nephrostomy, mechanical ventilation, phototherapy, surgery and was statistically highly significant p value = 0.0001

The limitations of the study were, various other factors affecting the DAMA like educational status of the parent's socioeconomic status, parents/ guardians understanding about the condition of the child and illness could not studied.

CONCLUSION

DAMA among pediatric age group is of great concern, DAMA was observed more among the newborns compared to infants, toddlers and children. Among newborns, phototherapy refusal was most common. In infants and children neuroimaging and lumbar puncture was the most commonly refused procedure. There was no gender bias.

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