

Discharge against medical advice from Neonatal Intensive Care Unit: 10 years experience at a University Hospital

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ABSTRACT

Background: Discharging patients against medical advice is a problem of every age-group. However, because of their physiological vulnerability, the risk for the neonatal population is greater when discharged against medical advice (DAMA). This article is a study of the prevalence of the problem, the possible causes and/or risk factors. **Materials and Methods:** A retrospective review of 10 years of medical records of neonates discharged against medical advice from a Neonatal Intensive Care Unit (NICU) at a university hospital. **Results:** The overall prevalence of DAMA was 1.6%. Most of the 51 infants who were taken out of hospital against medical advice (AMA) were term (72.5%) with a mean gestational age of 37.78 ± 2.5 weeks, of normal birth weight, with a mean of 2736 ± 661 g, Saudis (96%), those delivered vaginally (69%), and those that were provisionally diagnosed with transient tachypnea of newborn (TTN) and/or query sepsis (49%). There was no difference between males and females (M/F = 1.2). There was an association between DAMA and the timing of DAMA (27.5% of DAMA at weekends and 67% of DAMA from May to October). **Conclusion:** DAMA of neonates is particularly critical. The causes and risk factors are many and difficult to predict. In addition to several other factors, its prevalence is influenced negatively by some socio-cultural beliefs.

Key words: Discharge against medical advice, neonatal, neonatal intensive care unit

INTRODUCTION

In the everyday practice of medicine, healthcare providers are likely to face the challenge of patients leaving hospital against medical advice, known as LAMA or DAMA (leave against medical advice or discharge against medical advice). Although this situation is well-known around the world, it remains complicated, unpredictable, and almost impossible to eliminate. The issue of DAMA is even more complicated with regard to children because it is their parent(s) or care-givers who take the decision and not the patients. Many studies have discussed this issue from different perspectives. However, the number of case series and

articles on the hospital experience is still low. Moreover, to our knowledge, no national study has focused on neonates and NICUs, or reported an NICU-DAMA experience. This article will present, discuss, and analyze the DAMA experience of the Neonatal Intensive Care Unit (NICU) at King Fahd Hospital of the University (KFHU) over a 10-year period.

MATERIALS AND METHODS

This retrospective study was carried out at the NICU of KFHU, Alkhobar. KFHU is the largest teaching hospital in the region, and the only governmental hospital that provides level III neonatal service in the city of Alkhobar. The NICU at KFHU has a capacity of 18 beds and provides full level III neonatal care. This study was authorized by the Ethical Committee of the University of Dammam.

All NICU cases whose caregivers had signed DAMA between January 2001 and December 2010 were reviewed. The information obtained from the old files included gestational age, sex, birth weight, place and mode of

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delivery, nationality, admitting diagnosis, and length of hospital stay. In addition, a unique variable that had never been examined before, the timing of DAMA (day of the week and month of the year) was recorded since we speculated that the timing of DAMA could be an important risk factor or predictor.

Microsoft excel spread sheet was used for data collection and the data analyzed using statistical package for the social sciences (SPSS) version 15.0. The means, ratio, and percentages were calculated, and the statistical significance was set at $P < 0.05$.

RESULTS

A total of 3255 neonates, (2166 Saudis and 1089 non-Saudis; 2:1 ratio) were admitted to the NICU in the 10-year period studied. Of that number, 51 (1.6%) were DAMA; 28 males (55%) against 25 females (45%); M/F = 1.2. Most DAMA cases (49 infants, 96%) were born at KFHU. The referred infants were 2 (4%). Of the 51 DAMA infants, 35 (69%) were delivered vaginally while 16 (31%) were delivered by Cesarean section, $P < 0.05$. Forty-seven (92%) DAMA infants were Saudis (2.2% of total 10-year-NICU admissions), and four infants (8%) were non-Saudis (less than 0.4% of total NICU admissions), $P < 0.05$. The mean birth weight was 2736 ± 661 g. Thirty-seven infants (72.5%) were term, and 14 (27.5%) were pre-term with a mean gestational age of 37.78 ± 2.5 weeks. One-third of the preterm infants were borderline prematures (36 weeks). Twenty-five (49%) out of 51 infants were admitted with TTN and/or query sepsis, 11 (22%) were admitted as infants of diabetic mothers (IDMs), and four (8%) were IUGRs (intrauterine growth retarders). The remaining 11 (22%) infants were admitted with different diagnoses. The average length of stay of the DAMA infants was 10 ± 7.7 days. It was interesting to note that 19 infants (37%) were signed DAMA during weekends, especially on Wednesdays (27.5%) $P < 0.05$, while the remaining DAMA were distributed throughout the week. It was also noticed that 34 infants (67%) were signed DAMA between May and October. Eleven of them (22%) were signed DAMA exclusively during the month of May ($P < 0.05$), and only 17 infants (33%) went DAMA in the remaining six months.

DISCUSSION

The prevalence of DAMA varies widely in the literature, from less than 1% up to 30% or even more.^[1-3] This prevalence is influenced by many factors such as age, economic status, race, socio-cultural issues, and mental stability.^[2,3] However, there seems to be less variation in the prevalence among children, probably because of

the scarcity of studies available.^[4] Most of the available DAMA studies on children have estimated the prevalence to be between 1% and 6%,^[5,6] and in these studies, the financial factor was crucial in the making of the decision of DAMA.^[7] Therefore, prevalence is definitely affected in a situation where the health service is either provided by the government or covered by the medical insurance. A study of neonates and NICUs reveals a bigger problem. In a review of current publications and online medical database sources, only one article, Nigerian, was discovered that had studied DAMA among neonates in a neonatal special care baby unit (SCBU).^[7] However, the result of that study is not appropriate for comparison to our study since the most important factor that influenced their prevalence of DAMA was financial, which is not an issue at KFHU.^[7]

The prevalence of DAMA of the NICU at KFHU over the 10 years was 1.6% (with no significant difference between males and females). Interestingly, this prevalence is comparable to many papers on studied adult patients and much below most of children-DAMA articles including the Nigerian study (4.3%).^[1-3,7] This discrepancy should be taken in the context of the uniqueness of the neonatal population.^[8]

About two-thirds of the DAMA infants (69%) were born vaginally, which makes vaginal delivery a potential risk for DAMA. The higher chance of DAMA here is partly because of the early ambulation of mothers, but mother's experience and parity could play a role, especially under certain cultural beliefs.^[4,7] Most of the DAMA infants were born at KFHU (96%). Although KFHU is a referral center, the percentage of DAMA remains highest among those born at KFHU, probably because infants referred here are usually rather sick and/or are referred from private hospitals; so, financial reasons are unlikely basis for DAMA. An interesting finding in the study was that in spite of the fact that 50% of the total NICU admissions over the 10-year period were non-Saudis, only four infants out of 1089 were DAMA (<0.4%) compared to 47 Saudi infants out of 2166 (2.2%), representing 96% of total DAMA ($P < 0.05$). This indicates that Saudis significantly signed DAMA more than others, which makes this an important issue to explore in a different study. It was no surprise that most of the DAMA infants were of good birth weight (mean of 2736 ± 661 g) and full term (mean gestational age of 37.78 ± 2.5 weeks).^[7] This is because many parents had the wrong perception that a baby that was "large" and term was healthy. The principal admitting diagnosis of almost 50% of DAMA infants was TTN and/or query sepsis, which indicates that parents under-estimated the importance of these diagnoses and their potential catastrophic outcome. Parents are reluctant to remain in hospital for what seems to be a harmless

condition, but, neonatal sepsis remains an important cause of neonatal morbidity and mortality not only in Saudi Arabia but worldwide. This issue equally applies to the 22% and 8% of infants of diabetic mothers (IDM) and cases of intra-uterine growth restricted (IUGR), respectively. As indicated in other studies, most DAMA takes place in the first week of admission (73%),^[7] which is extremely serious, especially if parents decide not to take the infant back the hospital. Physiologically, a healthy term newborn is fragile and vulnerable in the first few days of life. The seriousness is amplified when dealing with an infant at risk who is taken away from the NICUs against medical advice.^[8]

The causes of DAMA in our study were not much different than what have been published in another Saudi paper on older children,^[9] indicating that the socio-cultural beliefs and values have a great influence. There did not seem to be any reasons of great significance to warrant DAMA. The reasons adduced were that they were domiciled in other regions, had other children at home, were dissatisfied with the care provided, had a false impression that there had been some improvement or under-estimated the condition and so forth.

Scrutiny of the files of a 10-year-period provided an extraordinary chance to make this unique finding. It was clear that DAMA was much higher at weekends (37%), $P < 0.05$. Wednesdays alone represented 27.5% of all DAMA infants. Likewise, almost two-thirds of DAMA infants (67%) left the hospital between the months of May and October ($P < 0.05$). The month of May alone represented 33% of all DAMA cases. None of all available children and neonatal DAMA studies and probably adults reviewed, mentioned the possibility of the influence of time (weekends or seasons) on the prevalence of DAMA. This particular finding demands a detailed search, probably a prospective study to elucidate the role of time in taking the decision to DAMA.

CONCLUSION

DAMA remains a practical challenge in every single branch of medicine. Because of their unique physiology and requirements, neonates are more likely to face serious problems as a result of being DAMA. Saudi Arabian

culture, as many other Arab societies, is complex, and in dealing with families, many issues other than medical knowledge should be taken into consideration. The utmost should be done to convince parent(s) not to take their infants out of hospital against medical advice. Our study has shown that the potential risk factors for DAMA are vaginal delivery, inborn infants, full term and/or babies with normal birth weight, being Saudi, the first week of admission, an admitting diagnosis of TTN and/or query sepsis, and finally certain days of the week, particularly weekends and certain seasons of the year.

We recommend a more detailed prospective study on a larger scale to carefully examine the psycho-social reasons behind the seasonal variation of DAMA as they could be preventable. The fact that Saudis are more likely to sign DAMA also has to be looked at. We also recommend that any further studies should trace the rate of readmissions of those neonates who were taken out of hospital against medical advice.

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