Pattern and Variation of Umbilical Stump Fall in Newborns Who Received Antibiotics for Sepsis

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Received date: Apr 25, 2015; Accepted date: June 04, 2015; Published date: June 12, 2015

Abstract

Objective: To study the variation of separation of umbilical stump in newborns who received intravenous antibiotics and compare it with healthy newborns.

Method: Two groups of newborns were taken, each comprising of 100 newborns. One group had received intravenous antibiotics for sepsis and the other group comprised of healthy newborns. On follow ups, the day of separation of umbilical stump was asked to the mothers and was noted and analyzed.

Results: Newborns who received antibiotics had a delay in separation of umbilical stump (mean=18.26 days), whereas the healthy newborns had early cord separation (mean of 8.68 days).

Conclusion: Delay in umbilical stump separation in antibiotics received newborns is due to decreased infiltration by bacteria and thus leucocytes and delayed digestion by bacteria. The family members can be counselled accordingly to allay their anxiety.

Keywords: Newborn; Umbilical stump; Antibiotics

Introduction

Falling of umbilical stump is a matter of concern for the mother & family. Many a times it takes longer to fall, which is a cause of worry for the family. The stump separation depends on various factors as gestational age of the baby [1], application of rectified spirit or gentian violet [2], sponge bathed or head bathed [3,4] or any application of salicylic sugar powder [1,4] or topical breast milk [1,5]. This study is undertaken to find out the variability of day of falling of umbilical stump in a newborn who has received intravenous antibiotics for sepsis and compare it with normal healthy newborns.

Subjects and Methods

The study was an observational study which was conducted in a level-II nursery and the follow-up clinic in Pediatric OPD of Tata Main Hospital, Jamshedpur over a period of 3 months, from August 2014 to October 2014. Two groups of newborns were formed. One group consisted of one hundred consecutive newborns admitted in nursery and given intravenous antibiotics for sepsis. The other group consisted of one hundred consecutive healthy neonates who received only routine care. The babies who were admitted in nursery were given sponge baths. After discharge, mothers were instructed to give sponge baths only, until the umbilical stump fell. They were also instructed not to apply anything over the umbilical stump and maintain hygiene of the stump (e.g. putting baby diaper below the umbilical stump). The day of fall of umbilical stump was asked to mothers from both groups when they visited the well-baby clinic subsequently.

1. Inclusion Criteria- One hundred consecutive newborns who received intravenous antibiotics for sepsis and one hundred consecutive healthy neonates who were either kept in nursery for routine care or ‘roomed in’ newborns from the maternity ward were included in first and second group respectively.

2. Exclusion Criteria- Newborns having morbid conditions like congenital anomaly, perinatal asphyxia, preterm babies, umbilical sepsis & babies having umbilical catheterization were excluded from the study.

Results

In the group of newborns who didn’t receive any antibiotics, majority had their stump fall within 10 days (n=77) and the mean day of umbilical stump fall was 8.68 days with a range of 3-21 days (Table 1). One baby had stump fall on 21st day.

The other group of newborns, who received IV antibiotics for sepsis, had a delayed separation of umbilical stump. Most of them had their stump separated during the 3rd week (n=41) followed by 4th week (n=37). On evaluation, mean day of stump separation in those babies was found to be 18.26 days. Two babies had their stump separation on 32nd day of life (Table 1). Graph was plotted as seen in (Figure 1).
Table 1: Day of fall of umbilical stump

| Day of fall of umbilical stump | Healthy Babies | Baby receiving iv antibiotics |
|-------------------------------|---------------|------------------------------|
| 3-10                          | 77            | 1                            |
| 11-15                         | 15            | 15                           |
| 16-20                         | 7             | 41                           |
| 21-25                         | 1             | 37                           |
| 26-30                         | 0             | 4                            |
| 31-35                         | 0             | 2                            |
| Range                         | 3-21          | 9-32                         |
| Mean                          | 8.68          | 18.26                        |
| SD                            | 2.75          | 4.32                         |

Discussion and conclusion

In this study it was found that majority of healthy babies had their stump fallen before 9th day (Mean=8.68 days). The babies who received intravenous antibiotics had majority of their stump fallen by 3rd week (Mean= 18.26 days), followed by 4th week. This delay of stump fall in newborns who received antibiotics can be explained by decreased infiltration of umbilical stump by bacteria and decreased infiltration by leukocytes resulting in delayed digestion of the umbilical stump and thereby delayed stump separation.

While advising on baby care and mother craft, the staff nurse may assure the mother about the possible delay in umbilical stump separation, when the baby has received antibiotics in nursery thus allaying unwarranted anxiety.

In another European study, it was also found that the duration of umbilical stump fall was delayed in newborns receiving antibiotics and also in preterm babies and caesarean section born babies [6]. In another Indonesian hospital based study it was found that the mean separation day of umbilical stump was 10.9 days and factors like sex, birth weight, gestation and nutrition didn’t have any impact on cord separation [7-15].

Our study, was, however done on a small number of patients. Further large studies are required to draw any conclusion.

Acknowledgement

The authors were grateful to GM (Medical Services), Tata steel, for permitting them to send this article for publication. They also acknowledge the contribution of parents of the babies and for their consent.

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