
Switch from Antibiotic Eye Drops to Instillation of Mother’s Milk Drops as a Treatment of Infant Epiphora

Summary

In a paediatric practice, the management of patients with signs and symptoms of congenital nasolacrimal duct obstruction (CNLO) was switched from topical antibiotic to topical mother’s milk (MM) -based regimens. The conservative management of this condition includes frequent cleansing of the lids, digital lacrimal sac massage, and application of topical antibiotic drops when there is a mucopurulent discharge. The method for managing CNLO has evolved in our office of paediatrics during the past 7 years. This change was initiated by some mothers who have applied traditional therapy: MM eye drops. This evolution has been accompanied by a number of articles from the mid 1990s into the 2000s on safety of MM eye drops. This is a retrospective analysis to compare results before and after management switching. Sixty-five patients who met the following selection criteria were evaluated: birth before the 1 January 1999 and 1 June 2006, affiliation to this clinic within the first month of life, initially breastfed and follow-up until epiphora resolution. Twenty patients underwent a conventional treatment on antibiotics (A) and 45 patients underwent an alternative treatment on topical MM.

Study Population

There were no significant differences in birth gestation, type of delivery, birth weight, birth order or bilateral vs. unilateral CNLO between those who had received A and those who had received MM. There were significant differences in gender (unexplained): 15 males/5 females in case of A vs. 30 males/15 females in case of MM, \( P = 0.014 \); and in year of birth (the management was changed along several years): mean 2002.10 and SD 2.15 in case of A vs. mean 2003.42 and SD 0.32 in case of MM., \( P = 0.023 \). The Fisher’s exact test was used to compare proportions and the \( t \)-test was used to compare different means. Table 1 gives the data for epiphora resolution by
treatment method. The Kolmogorov–Smirnov test confirmed that these data were not normally distributed. Comparisons of groups were carried out using a Man–Whitney U-test. Duration of epiphora for A treated infants was substantially greater than for MM treated infants (mean: 5.40 vs. 1.42, U 710.0, \(P < 0.001\)). No adverse effects of any treatment were reported. The largest prospective study of CNLO reported an overall spontaneous resolution rate of 96% at 1 year of age [6]. No gender differences have been reported. Our patients on group A show a rate of resolution similar to spontaneous resolution, instead the rate of resolution of babies in group MM is superior to spontaneous resolution. The cultural practice of applying human milk to the sticky eye appears to have no adverse effects and is associated with shorter time of resolution than is seen with the use of antiseptics. Boys appear to display worse prognosis than girls.

**Oxidative Stress in Neonatal Hyperbilirubinemia**

**Summary**

We investigated the role of bilirubin as an antioxidant in neonatal hyperbilirubinemia (NNH) by measuring malondialdehyde (MDA) levels, a marker of oxidative stress and key antioxidant enzymes viz., superoxide dismutase (SOD), catalase and glutathione peroxidase (GPx) in otherwise healthy 70 term newborns with NNH and 20 control newborns without jaundice. Jaundiced newborns had significantly lower MDA but higher SOD, catalase and GPx levels. Furthermore, plasma bilirubin showed significant negative correlation with MDA but positive correlation with antioxidant enzyme activities. It is concluded that NNH is associated with lower oxidative stress.

**Table 1 Epiphora resolution**

<table>
<thead>
<tr>
<th></th>
<th>Group A ((n = 20))</th>
<th>Group MM ((n = 45))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 30th of life</td>
<td>3 (15%)</td>
<td>26 (57%)</td>
</tr>
<tr>
<td>Day 60th of life</td>
<td>10 (50%)</td>
<td>41 (90%)</td>
</tr>
<tr>
<td>Day 90th of life</td>
<td>14 (70%)</td>
<td>44 (97%)</td>
</tr>
<tr>
<td>Day 120th of life</td>
<td>17 (85%)</td>
<td>44 (97%)</td>
</tr>
<tr>
<td>Day 150th of life</td>
<td>18 (90%)</td>
<td>45 (100%)</td>
</tr>
</tbody>
</table>

Group A: On Antibiotic eye drops.
Group MM: On topical mother’s milk.

Elevated bilirubin level is a very common finding in the first few days of life. Although, the mechanism of neonatal hyperbilirubinemia (NNH) is well described, the purpose or significance of the almost universal occurrence of jaundice in newborns has remained an enigma. The observation that bilirubin is a powerful antioxidant may offer an explanation [1].

The objective of the present study was to evaluate the relationship of plasma bilirubin with malondialdehyde (MDA) and antioxidant enzymes viz., superoxide dismutase (SOD), catalase and glutathione peroxidase (GPx) in NNH. Neonates, who developed visible icterus in the first week of life, were eligible for inclusion in the study. Exclusion criteria were infection, perinatal asphyxia, respiratory distress or major malformation. None of the study subjects needed resuscitation at birth or oxygen administration. Most of the infants (>95%) were breastfed.