STUDY OF THE EFFECT OF MOCHARAS IN PAIN MANAGEMENT OF NEWBORN.

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ABSTRACT

Background: New borns undergo various minor procedures like venipuncture (for sample collection). The prevention of pain is important because repeated painful exposures can have various short term and long term side effects. According to Ayurveda the elevated Vata is the root cause of Vedana. The Gunas of Mocharas like Guru, Ushna, Snigdha which are in contrast to the Laghu, Sheet and Ruksha Guna of Vata can be used to pacify the Vata and hence act as Vedanasthapan. Mocharas is being used in Ayurveda for relief of pain in adult population. Hence, we tried it in newborn babies in this study.

Methodology: A pre informed and consented open, randomized, controlled, clinical trial was conducted to evaluate the analgesic effect of Mocharas in neonates. A 50 neonates were randomly allocated. In trial group Mocharas was given as an intervention for pain relief. The neonates were assessed as per parameters (NIPS AND PATS) made for the study.

Conclusions: Mocharas exhibits an overall reduced pain perception activity in neonates and can be used as an effective analgesic agent in neonates in painful procedures.

KEYWORDS: Analgesia, Mocharas, Procedural pain, Vedanasthapak.

INTRODUCTION

Studies indicate a lack of awareness among health care professionals of pain perception, assessment, and management in neonates. The prevention of pain is important because repeated painful exposures can have deleterious consequences. Fear of adverse reactions and
toxic effects often contributed to the inadequate use of analgesics. In addition, health care professionals often focused on treatment of pain rather than a systematic approach to reduce or prevent pain. More recent surveys have demonstrated increased awareness among health care professionals of pain in neonates and infants and its assessment and management. Several textbooks on pain in neonates and infants have been published, and measures for assessing pain have been developed and validated. However, despite the advances in pain assessment and management, prevention and treatment of unnecessary pain attributable to anticipated noxious stimuli remain limited.

Pain perception is associated with complex physiological and behavioral changes in neonates, in the form of altered sleep pattern, disruption of adaptation to environment and changes in vital parameters.\(^1\) Physiologic responses to painful stimuli include compromised physiologic state such as hypoxia, hypercarbia, acidosis, hyperglycemia, respiratory dysynchrony along with increase in circulating catecholamine’s, increased heart rate and blood pressure and elevated intracranial pressure.\(^2\) Neonates undergoing repeated painful procedures and noxious stimuli have complex neurological, behavioral and developmental problems. Pain assessment scales based upon\(^3\) behavioral and physiological changes. Behavioral changes include, Neonatal Infant Pain Scale (NIPS), Pain Assessment toll Scale (PATS). Despite an increased awareness of pain in newborns over the past decade and recent efforts to improve pain management in this vulnerable population, studies indicate that pain management for infants is still inadequate.\(^4,5,6\)

Modern science has shown, via various research papers and publications as Sucrose a better analgesic drug on pain management of neonates. An ayurvedic approach should be considered in the field of kaumarbhritya for vedanasthapan in Neonate as an alternative or better medicine than common available modern drugs. This review is carried out with an aim to understand the pain perception mechanism in ayurvedic principle and to formulate ayurvedic management protocol. The presentation of neonatal pain management is critically reviewed from various database and classical texts.

*Mocharas* is being used in Ayurveda for relief of pain in adult population.\(^7\) It can be tried in newborn babies, as *Mocharas* shows *Vedanasthapak* (analgesic) activity in adults, so it is expected that the same effect would be observed in neonates too.
MATERIAL AND METHOD

TYPE OF STUDY
This was an open, informed, randomized, controlled, clinical study. The study was carried out in level 2 NICU of Bharati Ayurved Hospital Pune.

The Trial Group – The Mocharas was used as a trial drug as an analgesia.

STUDY POPULATION
The study population includes full term neonates delivered and admitted to Bharati Ayurved Hospital who required blood sampling for routine investigation. They were assessed for their responses to venipuncture performed in a standard manner.

SAMPLE SIZE
The sample size consisted of 50 neonates.

PREPARATION OF DRUG
The raw drug i.e. Mocharas (gum resin of Shalamali) was purchased from local market; authentification, standardization and analysis done. Physically cleaned of any impurities, rubbed on a washed stone with little quantity of sterile water and prepared it in a paste like form.

DOSE
0.2ml/kg of freshly prepared ready to use drug.

AGE GROUP
Only full term neonates whose age is >24 hours were included.

DURATION OF PROCEDURE
1 hour.

ROUTE OF ADMINISTRATION
Sublingual.

INCLUSION CRITERIA
• Only full term neonates whose age is >24 hours were included who were haemodynamically stable.
Neonates who required venipuncture for investigation of any underlying cause.
Neonate who had been fed 30 minutes prior to procedure.
Neonates who were not on or not likely to be shifted on any life support systems.

EXCLUSION CRITERIA

- Neonates who had external Congenital anomalies.
- Neonate who has required active resuscitation.
- Neonate suspected with cardiac disorder or with respiratory disorders.
- Neonate who had been fed less than 30 minutes prior to procedure.

OBSERVATIONS

TABLE NO. 1:- OBSERVATION OF NIPS SCORE.

<table>
<thead>
<tr>
<th>NIPS SCORE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILD-NO PAIN (0-2)</td>
<td>30</td>
</tr>
<tr>
<td>MODERATE (3-4)</td>
<td>16</td>
</tr>
<tr>
<td>SEVERE (&gt;4)</td>
<td>4</td>
</tr>
</tbody>
</table>

Interpretation

According to observation of NIPS score maximum number of patient found to have Mild to no pain (0-2).

TABLE NO. 2:- OBSERVATION OF PATS SCORES.

<table>
<thead>
<tr>
<th>PATS SCORE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS PAIN (≤10)</td>
<td>47</td>
</tr>
<tr>
<td>SEVERE PAIN (&gt;10)</td>
<td>03</td>
</tr>
</tbody>
</table>

Interpretation

According to observation of PATS score maximum number of patient found to have less Pain (≤10).

TABLE NO. 3:- MEAN HR, RR, SPO2, BP, RATE IN CONTROL GROUP AND TRIAL GROUP.

<table>
<thead>
<tr>
<th>Vital parameters</th>
<th>Trial group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
</tr>
<tr>
<td>Heart rate</td>
<td>138.1</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>33.7</td>
</tr>
<tr>
<td>SpO₂ At</td>
<td>83.2</td>
</tr>
<tr>
<td>Systolic B.P.</td>
<td>42.3</td>
</tr>
<tr>
<td>Dystolic B.P.</td>
<td>42.3</td>
</tr>
<tr>
<td>Temperature</td>
<td>36.5</td>
</tr>
</tbody>
</table>
DISCUSSION AND RESULTS
This study was designed with the principle objectives to assess the analgesic effect of 
Mocharas in Neonates. As per recommendations of American Academy of Pediatrics (AAP)
the dose of 24% sucrose solution to be administered with 0.2ml/kg. The dose for Mocharas
for neonate has not been mentioned anywhere in Ayurvedic classics therefore the dose was
kept constant as of 24% sucrose solution keeping in mind to assess the efficacy of a newer
drug at the same dose.

The NIPS system though contains few objective variables, grading of the pain on nips score
given in. (Table no.1) MOCHRAS was tried in 50 neonates among them 30 patients were
found to have mild to no pain while only 4 patients were found to have severe pain indicates
the analgesic effect of Mocharas in neonatal procedures.

The PATS system though contains few objective variables. (Table no. 2) MOCHRAS tried in
50 neonates among them 47 patient found to have less pain while only 3 neonates found to
have severe pain For this study purpose parameters like HR, RR, BP, and SPO2 were
measured pre venipuncture, during venipuncture and post venipuncture (Table no.3). In the
trail group heart rate were (pre, during and post) 138.1, 144.4 and 134.3; respiratory rate were
(pre, during and post) 33.7, 33.5 and 33.8; SpO2 level were (pre, during and post) 83.2, 84.9
and 75.2; Systolic B.P. were 42.3, 44.0 and 41.1; Dystolic B.P. were (pre, during and post)
42.3, 44.0 and 41.1 at last Temperature (pre and post) 36.5, 37.0.

CONCLUSIONS
• Pain can be assessed by its effect on physiological parameters, behavioral patterns,
  exhibited by the neonate.
• Mocharas tends to keep the neonates relaxed and less pain during procedure.
• On a painful stimulus it does not cause alteration in peripheral circulation and tends to
  bring the heart rate, respiratory rate and blood pressure to a normal level faster.
• Heart rate, respiratory rate and blood pressure fall faster and tend to stay on the lower side
  of the normal limit indicating less chance of complications arising due to pain.
• Mocharas exhibits an overall analgesic activity in neonates or can be said that it reduces
  pain perception in neonates.
REFERENCES


