

Effect of Coconut Oil Massage on Weight and Neurobehavioral Response in LBW Babies

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Abstract

Massaging the newborn is an age old tradition in India, which leads to weight gain. The present quasi-experimental study was conducted to assess the effectiveness of coconut oil massage among neonates in a selected tertiary care hospital in Delhi. The 15 neonates in experimental group received the coconut oil massage, and standard care was given to neonates in control group. No significant increase in weight or neurobehavioral response was observed after the coconut oil massage therapy for 7 days. Coconut oil massage does not seem to have effect on weight or neurobehavioral response in LBW babies.

Keywords: coconut oil, LBW babies, massage, neurobehavioral, weight

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INTRODUCTION

Moderate pressure, when applied during a massage therapy, leads to weight gain in preterm infants. The average gain in weight is enhanced, with the use of oils, such as coconut and safflower that increases the production of triglycerides, due to increased transcutaneous absorption of oil. At the same time, the use of synthetic oil increases vagal activity that directly influences the gain in weight. This gain in weight is in turn related to shorter hospital stays, thereby reducing the money spent in hospital billings. In spite of such benefits, preterm infant massage is only practiced in 38% of neonatal intensive care units.^[1,2] The present study was carried out to assess the effect of coconut oil massage on weight and neurobehavioral response among LBW babies.

METHOD

This quasi experimental, nonequivalent control group, pretest posttest study was conducted during July–December 2014 in the NICU of a tertiary care center at Delhi

to assess the effect of coconut oil massage on weight and neurobehavioral response. Sixty stable neonates weighing less than 2.5 kg or gestational age below 37 weeks present during the data collection period, with no congenital anomalies or skin disorders were included. Convenience sampling was done to select the neonates. Institutional Review Board had approved the study.

Weight was measured using a digital infant weighing scale which was calibrated and neurobehavioral response was assessed using Dubowitz scale which is a standard scale. Dubowitz scale is used to assess the neuromuscular maturity and physical maturity of the low-birth weight babies. There are 12 components for neuromuscular maturity and seven components for physical maturity. In order to attain the neurobehavioral response, individual neuromuscular and physical maturity scores for the 12 categories were added. The inter-rater reliability of the

Dubowitz scale and weighing scale was established ($r = 0.93$).

Consent was obtained from the mothers of the neonates. First the data were collected from 30 neonates in control group and then from 30 neonates in the experimental group to avoid contamination. Oil massage given to low-birth weight infants in experimental group was done by performing gentle firm strokes with the palms of hands with coconut oil, with 5 mL/kg of body weight being applied per session, two times a day beginning from 2nd day until discharge. Two massage sessions were performed per day for 15 min by the researcher. Oil massage was given for 1 week. The weight and neurobehavioral response was checked

before and after each session of oil massage.

RESULT

The data were analyzed using SPSS version 16. Both the groups were homogeneous with respect to birth weight and neurobehavioral response at the base line ($p > 0.05$). Neonates in the experimental group were exposed to coconut oil massage by the researcher. The neonates in control group received standard care. There was no significant difference in the posttest scores after massage therapy in the weight and neurobehavioral response ($p < 0.05$) as compared between experimental and control group (Table 1).

Table 1. Comparison of Post- test Weight and Neurobehavioral Response of LBW Babies Between Experimental and Control Group.

Group	Mean \pm SD	SE MD	MD	df	t
Weight					
Experimental (n1=30)	2.23 \pm 0.14	0.08	0.02	59	0.54
Control (n2=30)	2.21 \pm 0.12				
Neurobehavioral response					
Experimental (n1=30)	28.06 \pm 4.1	1.03	0.06	59	0.05
Control (n2=30)	28.46 \pm 3.9				

$t(59) = 2, p > 0.05$, Not Significant.

DISCUSSION

In the present study, massage was given two times per day beginning from 2nd day until discharge, whereas in a study conducted by Sankaranarayanan *et al.*,^[3] oil massage was given beginning from day 2 of life until discharge, by a trained person, and thereafter was continued by the mother, until the infant completed 31 days of age. This was being done four times a day. A daily follow up was being done until discharge, and every week after discharge for anthropometry. Neuro-behavioral outcome was assessed by the Brazelton Score^[4] at baseline, on day 7 and day 31.

In the present study, no significant weight gain was observed among preterm babies

whereas Sankaranarayanan *et al.*^[3] reported that preterm infants receiving coconut oil massage showed a greater length gain velocity compared with placebo group. Similar to the findings of current study they reported that no statistically significant difference was observed in the neurobehavioral assessment.

The authors have no conflicts of interest.

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