Effect of Topical Olive Oil Therapy on Preterm's in Neonatal Intensive Care Unit

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Abstract. This study consisted of 51 preterm neonates that fulfilled the inclusion criteria. Olive oil was applied twice daily for 14 days to neonates in the study group (n = 26) while the control group neonates (n = 25) received no topical olive oil therapy. Data collection included physiological parameters, as well as anthropometric measurements. Evidence of sepsis, whether clinical or laboratory (blood and skin culture), was examined, skin condition was evaluated, and serum triglyceride levels were measured. The results showed a significant effect of the topical application of olive oil on the regulation of body temperature for the neonates in the study group. In addition, better skin condition and increments in the anthropometric parameters were observed for the neonates in the study group compared with neonates in the control group. The incidence of septicemia was 3.8% in the study group as opposed to 8% in the control group neonates. Also, serum triglyceride levels for neonates in the study group were higher than those in the control group. This study indicates a need for similar clinical trials with an increased number of subjects to be performed over a longer period to reach significant neonatal outcomes.

Keywords: Preterm neonates, Olive oil, Oil therapy.
Introduction

According to the World Health Organization (WHO), preterm neonates are those born before 37 weeks of gestation and beyond the limit of viability, counting from the first day of the last menstrual period. In other words, they are neonates who have not achieved the fetal development level that generally allows for life outside the uterus\textsuperscript{[1]}. Statistically, the preterm birth rate has increased. In 2005, 12.9 million births, or 9.6\% of all births worldwide, were preterm. Approximately 11 million (85\%) of these preterm births were concentrated in Africa and Asia, while about 0.9 million in Latin America and the Caribbean and only 0.5 million occurred in each of Europe and North America\textsuperscript{[2]}.

Common preterm neonates’ problems are closely associated with their state of maturity. Preterm neonates’ underdeveloped organs expose them to different health problems\textsuperscript{[3]}. The first week of life is the neonates’ most vulnerable period, when about 50-70\% of fetal neonatal illnesses present; the most common of these illnesses is serious bacterial sepsis\textsuperscript{[4]}. This is because preterm neonates’ epithelial barrier, which provides the first line of host defense, lacks the naturally protective cutaneous biofilm, the vernix caseosa. The epithelial barrier is also developmentally immature, functionally compromised, and may simply be injured\textsuperscript{[5]}. Furthermore, measurements of Transepidermal water loss (TEWL) have shown that preterm neonates have immature skin barrier function for longer than four weeks, resulting in an increased risk of dehydration and thermal instability\textsuperscript{[6]}. So, measures need to be taken to overcome these problems, and some of the health problems of neonates can be prevented through innovative approaches, such as skin barrier replenishment\textsuperscript{[5]}.

Oil therapy is considered an integral component of traditional care practices in many populations, especially in the Indian subcontinent and the Mediterranean region. They have routinely applied natural oils to the skin of their neonates\textsuperscript{[7,8]}. One such oil is olive oil\textsuperscript{[6]}.

Olive oil comes from a blessed tree that was noted in the Holy Qur’an and Prophetic sayings (\textit{Hadith}) by Prophet Muhammad (Peace be upon him)\textsuperscript{[9]}. It is a natural, inexpensive, and widely available product\textsuperscript{[6]}.

For preterm neonates, the application of olive oil enables the immature epidermis to metabolize lipids that come from the oil and then utilize them to form a healthy functional epidermal barrier of the skin\textsuperscript{[4]}.
Moreover, topical therapy with natural oils has a positive effect on thermoregulation, growth\textsuperscript{[10]}, and serum triglyceride levels\textsuperscript{[4]}. However, this practice has evolved empirically\textsuperscript{[11]}. Sometimes, oil application on the skin causes harm, either, as rashes or by increasing the risk of bacterial and fungal colonization\textsuperscript{[10]}.

A critical challenge for nurses is in improving the outcomes for preterm neonates. The issue of how to maintain the quality of life for preterm neonates is the central focus of care given in the Neonatal Intensive Care Unit (NICU)\textsuperscript{[11]}. Therefore, this research was carried out to investigate the cutaneous and systemic effects of topical olive oil therapy on preterm neonates in the NICU.

**Materials and Methods**

A randomized controlled trial was conducted in the NICU at King Fahd University Hospital in Al-Khobar City, Kingdom of Saudi Arabia. The study was approved by the local committee of biomedical ethics, University of Dammam. Consent was obtained from the parents at the time of enrollment.

All preterm neonates in the NICU during the period of 1\textsuperscript{st} November 2009 to 30\textsuperscript{th} April 2009 were eligible for inclusion in the trial. Hence, if their gestational age was at or less than 34 weeks per the criteria of the Ballard examination, free from major congenital anomalies, and free from generalized skin disease, skin infection, or defect. They were eligible as soon as they received one third of their total fluid intake. On the other hand, preterm neonates were excluded if they met any of the following criteria: (a) they required phototherapy; (b) anthropometric parameters at birth were less than the 10\textsuperscript{th} percentile for the gestational age; or (c) enteral feeds were held for more than five days for any reason during the study interval.

Eligible neonates were randomly assigned to the study or control groups through a systemic allocation. In this distribution, all neonates born on an odd number day were assigned to the study group, while those born on an even number day were assigned to the control group. Olive oil was applied to the skin of preterm neonates in the study group twice daily for 14 days, while neonates in the control group received the NICU’s standard skin care, which does not include any type of oil application.
The technique of application was standardized. The doses were measured out with a sterile syringe. For those weighing more than 1 kg, 1.5 ml of oil was used per application, while neonates weighing less than 1 kg received a smaller dose, namely 0.75 ml of oil. An olive oil culture was performed on each container assigned for a single neonate before the first application. Another culture was performed on the 7th day of application to make sure that the oil had not colonized.

Oil application involved the majority of the body surface area, excluding the scalp, face, and areas of intravenous access. The application was carried out in a gentle circular motion to minimize shear force on the skin. The principal researcher first applied oil to both shoulders of the neonates while they were in the prone position. This was followed by the application of the oil from the upper back to the waist. Then, the oil was applied to each of the upper and lower limbs separately while the neonates were in the supine position.

Data related to antenatal history, such as maternal age, gravidity, parity, maternal co-morbidity, mode of delivery, antenatal steroids used, antibiotics used, and complications encountered before, during, or after delivery, were recorded. Data was also gathered relating to the characteristics of preterm neonates, including gender, date of birth, gestational age, Apgar scores at one and five minutes after birth, and chronological age at enrolment. Additionally, physiological parameters (e.g., body temperature, incubator or radiant warmer temperature, heart rate, respiratory rate, and blood pressure), anthropometric parameters (e.g., birth weight, length, and head circumference), diagnosis on admission, and antibiotics used or other concurrent therapies. Each neonate was continuously followed during the study period to assess the following: physiological parameters, anthropometric parameters, symptoms and sign of clinical sepsis, skin condition, and laboratory tests.

The information was gathered at different times, depending on the parameters. The physiological parameters were first measured and recorded immediately before oil application. The second measurement was taken 30 minutes after application twice daily in both groups. The anthropometric parameters have different bases. Neonates’ weights were measured without clothes on an electronic weighing scale at the beginning of the study (day 0) and then on days 3, 7, 10, and 14. However, head circumference and length were measured at (day 0) and then once weekly with a non-stretchable paper tape. In addition, the
bedside nurse daily assessed all the eligible preterm neonates to detect any clinical symptoms and signs of sepsis (e.g., tachypnea, poor feeding, gastric retention, weak sucking, lethargy, weak cry, or temperature alteration).

Evaluation of the skin condition was done twice daily by the assigned trained bedside nurse using the skin condition grading scale. The scale was based on the skin appearance and scores are given as follows: a score of 1 (best) was given to those who had normal skin; a score of 2 indicated dry skin; and a score of 3 (worst) indicated erythematic scaly lesions with fissures. The daily scores were added, and the average was taken for the following intervals: (day 0), days (0–7), and days (7–14). An inspection was performed six hours after each oil application to make sure that the oil had been absorbed through the skin. This was emphasized to evaluate the actual condition of the skin. A skin inspection was performed at a comparable time for the control group. The evaluated skin site was limited to the whole chest and the upper portion of the abdomen.

Furthermore, laboratory tests, including the triglyceride levels, blood culture, and skin swabs (supraumbilical and axillary) were performed on (day 0) and then again on days 7 and 14. The supraumbilical area of the skin was swabbed between the imaginary lines where the umbilical stamp intersects with the imaginary line across both nipples. The axillary swabbing area was taken from the right lateral mid axillary line.

Statistical analysis of the data was carried out with the SPSS program for Windows, version 16.0. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables. The means and standard deviations were used for quantitative variables. Quantitative continuous data were compared using the "student's" \( t \) test in the case of comparisons between the two groups. Qualitative variables were compared using the Chi-square (\( \chi^2 \)) test. A p-value of less than 0.05 was considered statistically significant.

**Results**

The study enrolled 51 neonates: 26 in the study group and 25 in the control group. Figure 1 gives the profile of the study, details of exclusion, and reasons for non-compliance. Table 1 documents the preterm neonate’s characteristics in both groups. The two groups were comparable, and no statistically significant differences were found between preterm neonates in the study and control groups related to their
gestational age, birth weight and gender. As well as in the Apgar scores at the first and fifth minutes, days on a mechanical ventilator or continuous positive airway pressure, chronological age at enrollment, days on intravenous lipid emulsion infusion, and days with a peripherally inserted central catheter from the day of enrollment.

**Fig. 1.** Flow diagram of the study.

**Table 1. Distribution of the sample according to preterm neonate characteristics.**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Study Group (n = 26)</th>
<th>Control Group (n = 25)</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preterm neonates characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GA (week)</td>
<td>31.23 ± 1.75</td>
<td>30.56 ± 2.52</td>
<td>1.11</td>
<td>0.27</td>
</tr>
<tr>
<td>BW (g)</td>
<td>1296.92 ± 223.9</td>
<td>1287.12 ± 217.87</td>
<td>0.16</td>
<td>0.88</td>
</tr>
<tr>
<td>Gender (no., %)</td>
<td>Male (14, 53.8%)</td>
<td>Female (12, 46.2%)</td>
<td>χ² = 1.7</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>1 minute (:5)</td>
<td>6.12 ± 1.62</td>
<td>-1.38</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>5 minute (:5)</td>
<td>7.85 ± 1.32</td>
<td>-0.36</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Days on a MV or CPAP</td>
<td>8.58 ± 2.01</td>
<td>7.48 ± 2.08</td>
<td>1.87</td>
</tr>
<tr>
<td></td>
<td>Chronological age at enrollment</td>
<td>9.08 ± 1.13</td>
<td>8.92 ± 1.32</td>
<td>-0.46</td>
</tr>
<tr>
<td></td>
<td>Days on intravenous lipid emulsion infusion from the day of enrollment</td>
<td>3.12 ± 0.7</td>
<td>3.24 ± 0.6</td>
<td>-0.68</td>
</tr>
<tr>
<td></td>
<td>Days with a PICC from the day of enrollment</td>
<td>7.23 ± 1.42</td>
<td>8 ± 1.76</td>
<td>-1.72</td>
</tr>
</tbody>
</table>

GA Gestational age, BW Birth weight, MV Mechanical ventilator, CPAP Continuous positive airway pressure, PICC Peripherally inserted central catheter.* P < 0.05.
Table 2 shows the distribution of the sample according to physiological parameters in the study and control groups 30 minutes after application. It was apparent that body temperature of the study group neonates became slightly elevated and the difference between the two groups was statistically significant ($t = 2.06, p < 0.05$). However, there were no statistically significant differences in terms of the other vital signs. All were within normal physiological limits.

<table>
<thead>
<tr>
<th>Physiological Parameters</th>
<th>Study Group (n = 26)</th>
<th>Control Group (n = 25)</th>
<th>After 30 minutes</th>
<th>( t ) Value</th>
<th>( p ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Temperature (^{\circ}C)</td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>( t ) Value</td>
</tr>
<tr>
<td>Heart Rate b/min</td>
<td>36.87</td>
<td>(± 0.33)</td>
<td>36.84</td>
<td>(± 0.21)</td>
<td>2.06</td>
</tr>
<tr>
<td>Respiratory Rate b/min</td>
<td>151.86</td>
<td>(± 13.44)</td>
<td>152.43</td>
<td>(± 13.31)</td>
<td>-0.80</td>
</tr>
<tr>
<td>Blood Pressure mm Hg</td>
<td>51.54</td>
<td>(± 5.04)</td>
<td>51.72</td>
<td>(± 4.68)</td>
<td>-0.70</td>
</tr>
</tbody>
</table>

* \( p < 0.05 \).

It should be noted, that the preterm neonates in the study group were able to maintain their body temperature earlier than the control group. Therefore, they were weaned to the crib before the end of the 14-day study period. The mean ± SD for days in the incubator for the study group was 11.8 (± 3.60) versus 13.28 (± 1.65) for the control group; however, this was not statistically significant ($t = -1.82, p > 0.05$).

Figure 2 shows the average body weights of neonates in both groups recorded over a period of 14 days. Table 3 shows the gain in anthropometric measurements of neonates in both groups during the same period. No statistically significant differences were found between neonates in the study and the control groups in terms of gains in anthropometric measurements (weight, length, and head circumference) during the study period of 7 and 14 days.

Figure 3 shows the percentage of preterm neonates with best skin condition (skin condition grading score 1) in the study and control groups for the intervals (day 0), days 0-7, and days 7-14. Baseline scores at (day
0) were not different between the two groups. Neonates in the study group had reached the 100% during the day’s 7-14 intervals, compared to 9% for neonates in the control group.

![Graph showing mean weight over days](image)

**Fig. 2.** Average body weights of neonates in the study and control groups over a period of 14 days.

**Table 3.** Distribution of the sample according to gains in anthropometric measurements of neonates in the study and control groups during the period of 7 and 14 follow up days.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Study Group (n = 26)</th>
<th>Control Group (n = 25)</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
<td>SD</td>
</tr>
<tr>
<td>Weight gain (g)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During 7 days</td>
<td>127</td>
<td>$\pm$ 13.10</td>
<td>126.00</td>
<td>$\pm$ 11.90</td>
</tr>
<tr>
<td>During 14 days</td>
<td>251.54</td>
<td>$\pm$ 12.47</td>
<td>243.20</td>
<td>$\pm$ 18.42</td>
</tr>
<tr>
<td>Length gain (cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During 7 days</td>
<td>0.83</td>
<td>$\pm$ 0.34</td>
<td>0.75</td>
<td>$\pm$ 0.33</td>
</tr>
<tr>
<td>During 14 days</td>
<td>2.06</td>
<td>$\pm$ 0.91</td>
<td>1.80</td>
<td>$\pm$ 0.58</td>
</tr>
</tbody>
</table>
Table 3. (Continuation) Distribution of the sample according to gains in anthropometric measurements of neonates in the study and control groups during the period of 7 and 14 follow up days.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Study group (n = 26)</th>
<th>Control group (n = 25)</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head circumference gain(cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During 7 days</td>
<td>0.70 (± 0.13)</td>
<td>0.64 (± 0.16)</td>
<td>1.59</td>
<td>0.12</td>
</tr>
<tr>
<td>During 14 days</td>
<td>1.69 (± 0.18)</td>
<td>1.55 (± 0.44)</td>
<td>1.50</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*: P < 0.05.

<chart>

Fig. 3. Percentage of neonates in the study and control groups with best skin condition (skin condition grading score 1) on intervals of 0, (0-7), and (7-14) follow-up days.

Moreover, sepsis results show no statistical significance in clinical sepsis, skin swabs, and blood samples between the study and control groups. The clinical rate of sepsis was 15.4% and 20% for neonates in the study and control groups, respectively. In addition, the obtained skin and blood samples revealed that supraumbilical and axillary cultures were negative for any microorganisms in either group. Only 3.8% and 8% of neonates in the study and control groups, respectively, had positive blood cultures for *Staphylococcus epidermidis*. 
Results of the triglyceride levels (mg/dl) for neonates are summarized in Table 4. The mean ± SD of triglyceride levels (mg/dl) for neonates in the study group were higher than those in the control group at days 7 and 14. There was no statistically significant difference on days 0, 7, and 14 (t = 0.02, p > 0.05), (t = 0.43, p > 0.05), (t = 1.20, p > 0.05), respectively.

The results of this study revealed that preterm neonates in the study group were discharged earlier than the control group. The mean ± SD number of days staying in the NICU was 35.42 (± 2.12) and 36.84 (± 2.97) for the study and control groups, respectively. There was no statistically significant difference between the two groups (t = -1.97, p > 0.05).

Table 4. Triglyceride levels (mg/dl) of neonates in the study and control groups on follow-up days 0, 7, and 14.

<table>
<thead>
<tr>
<th>Days</th>
<th>Study Group (n = 26)</th>
<th>Control Group (n = 25)</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>SD</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td>0 day</td>
<td>70.08 (± 27.23)</td>
<td></td>
<td>69.88 (± 31.82)</td>
<td>0.02</td>
</tr>
<tr>
<td>7 day</td>
<td>79.38 (± 51.52)</td>
<td></td>
<td>74.08 (± 34.48)</td>
<td>0.43</td>
</tr>
<tr>
<td>14 day</td>
<td>90.77 (± 82.64)</td>
<td></td>
<td>69.96 (± 25.80)</td>
<td>1.20</td>
</tr>
</tbody>
</table>

* p < 0.05.

Discussion

This study was designed to evaluate the effect of topical olive oil therapy on preterm neonates. The study evaluated the effect of a twice-daily application of olive oil on physiological parameters, anthropometric parameters, skin condition, incidence of sepsis (clinical and laboratory), and triglyceride level profile. Each neonate was continuously followed for 14 days.

The present study observed a statistically significant difference in relation to body temperature between neonates in the study and control groups after olive oil application, as shown in Table 2. This may be secondary to a reduction in TEWL and may have potential clinical benefits for preterm neonates, as with every milliliter of water that evaporates from the skin, 0.6 kilocalorie of heat is lost[12]. In our study, no report of any complications related to temperature, namely hypothermia was noted. On the contrary, there were two benefits in the
study group: their body temperature was slightly higher and they were weaned to the crib 1.5 days earlier than the control group. The results of the present study are in accordance with the Nopper et al. study; they also observed a slight increase in temperature after oil application to neonates in the study group compared to those in the control group\textsuperscript{[12]}.

The anthropometric measurements of the neonates in this study showed more gains with the olive oil group than those in the control group on days 7 and 14, though no statistically significant difference was observed, as shown in Table 3. Moreover, the weights of the preterm neonates in the two groups were comparable at the baseline. However, the neonates in the study group had a higher weight gain when compared to those in the control group, as shown in Fig. 2, especially in the day’s 10-14 intervals.

It’s presumed that if the study had been extended for another 14 days, the results may have yielded a significant difference similar to those obtained by Sankaranarayanan et al.\textsuperscript{[10]}. He reported a statistically significant difference in weight gain after 31 days of coconut oil massage as compared to placebo and mineral oils in the preterm neonate groups. The length gain velocity was also significantly higher in the coconut oil group compared to the placebo group. In addition, Arora et al.\textsuperscript{[13]} found that the oil massage group of neonates had a higher gain weight over 28 days than the massage-only and no massage groups. The mechanism by which the topical application of oil increases weight gain is unclear.

Healthcare providers have long known that neonates who are touched regularly tend to have increased growth rates, compared to those who are touched less often. There seems to be a biological connection between touching neonates while applying oil and their growth\textsuperscript{[14]}. Some researchers suggested that the application of a barrier, such as oil, prevents TEWL from the skin of neonates and helps in maintaining their temperature; better thermoregulation may promote more weight gain\textsuperscript{[15]}. Others hypothesize that the absorption of oil through the thin skin of the preterm neonates possibly has a role in weight gain, in that the skin of a preterm neonate allows for the significant absorption of fat, as it is a thin permeable layer. This may act as a source of energy and nutrition, leading to an improvement in overall growth\textsuperscript{[10,13]}.

The findings of the present study also show a high prevalence of best skin condition score (score 1) for the study group during days 7-14, as
shown in Fig. 3, although the baseline scores were not different between the study and control groups. The results of the present study are similar to the results of the Kiechl-Kohlendorfer et al. study that also showed visible significant effects after one to two weeks of oil application to neonates, and showed most obvious results after 3 and 4 weeks. In addition, the olive oil neonates group was superior to the other two groups in the Kiechl-Kohlendorfer et al. study[6].

In the present study, there was a concern that olive oil application on the skin may increase bacterial colonization and the development of sepsis because the skin of preterm neonates serves as an important portal for bacteria entry. However, the study showed a negative culture from the skin (supraumbilical and axillary) of neonates in the study and control groups. In addition, blood cultures with affected results of Staphylococcus epidermidis in the current study were lower in the study group in comparison with the control group; however there was no statistical significance.

Regarding to the clinical sepsis rate, it was also lower in the study group, but no statistical significant. The most common symptoms in both groups were decreased activity, oxygen desaturation, and residual feeds. The results of the current study confirm those of smaller studies. Kiechl-Kohlendorfer et al. study showed no significant difference in the rate of sepsis for preterm neonates after four weeks of daily topical oil therapy[6]. In Egypt and Bangladesh, topical applications of oil to enhance skin barrier function in preterm neonates reduced the incidence of nosocomial, culture-proven sepsis by about 40%-55%, and reduced mortality in the trial conducted in Bangladesh[11]. The decreased incidence of sepsis for preterm neonates in the study group is probably because olive oil therapy helps in preventing fissures and cracking of preterm neonate skin.

While oil therapy has been shown to be beneficial, it may have potential disadvantages. Contrary to our findings, a completed multicenter United States-based trial showed that Aquaphor therapy increased relative risk (odds ratio 1.43) for sepsis with coagulase-negative staphylococci regarding neonates weighing from 501 to 749 g; no effects were seen in neonates weighing 750-1000 g[16]. Another case control study stated that using topical petrolatum oil on the skin of extremely preterm neonates weighing less than 1000 g, promoted an
increase in the incidence of Candida sepsis\textsuperscript{[17]}. However, even though
one-fifth of our study groups were less than 1000 g, we had no case of
Candida sepsis, which is probably due to our strict policy of antibiotic
usage and liberal practice of prophylactic fluconazole for all high-risk
preterm neonates (\textit{i.e.}, with central vascular access, third-generation
cephalosporin, hyperalimentation, and steroids exposure).

Furthermore, Fernandez \textit{et al.}\textsuperscript{[18]} reported significantly higher serum
triglyceride levels in preterm neonates weighing 1500-2250 g after the
application of corn oil every four hours for a period of three days;
suggesting the likelihood of fatty acid absorption through the skin of
preterm neonates. Our data (Table 4) failed to demonstrate any
statistically significant difference in serum triglyceride levels between
the two groups; however, a visible increment was observed in the study
group neonates at days 7 and 14. Similarly, Arora \textit{et al.} observed no
statistically significant difference in serum triglyceride levels among all
three groups of study in their research\textsuperscript{[13]}.

Due to the benefits of the current study in olive oil application,
preterm neonates in the study group were discharged 1.42 days earlier
than those in the control group though there was no statistically
significant difference. Based on the results of the study, it is concluded,
that olive oil application has been shown to have significant potential for
improving the skin condition and the regulation of body temperature for
neonates. In addition to this potential, minimal effects have been
observed concerning weight gain, increased triglyceride levels, decreased
rates of sepsis, and early weaning from incubator to crib, as well as early
discharge from the NICU.

These recognized benefits have two causes: those related to the olive
oil per-se and those related to the tactile stimulation during the
application. Therefore, olive oil therapy could be an effective strategy for
improving neonatal outcomes. This study has led to a change in our
practice in the NICU. Therefore, the following recommendations are
suggested: introduce olive oil applications to preterm neonates as a
standard procedure in neonatal nurseries and NICU; raise the mothers’
awareness of the effect of olive oil, including adding classes to teach
proper oil application; and, lastly, perform a similar study over a longer
period.
References


تأثير العلاج السطحي بزيت الزيتون على الأطفال الخدج في
وحدة العناية المركزية للأطفال حديثي الولادة

أمانى أنور العبدالله، ومحمد أحمد الغامدي، نبويه علي أبراهيم
قسم تمريض الأطفال، كلية التمريض، و قسم الأطفال، كلية الطب
جامعة الدمام
الدمام - المملكة العربية السعودية

المستخلص: يتكون هذا البحث من 51 خديج تأثرت فيهم المعايير
المطلوبة. تم تطبيق الدهن الموضعى بزيت الزيتون مرتين يوميا لمدة
14 يوماً على الأطفال الخدج حديثي الولادة في مجموعة الدراسة
عددهم = 36، في حين أن الأطفال في المجموعة الأخرى
عددهم = 25 لم يتلقوا أي علاج موضعى. وشملت الدراسة جمع
البيانات الفسيولوجية، وكذلك قياسات نمو الجسم، والتحقق من وجود
التهابات، سواء كانت عن طريق الفحص السريري أو المعملي (مزعة
الدم ومسحة جلدية)، وتقييم الحالة الجلدية وقياس مستوى الدهون
الثلاثي. أوضحت الدراسة الحالية أن الأطفال الخدج حديثي الولادة
في مجموعة الدراسة الذين تلقوا علاجاً موضعياً بزيت الزيتون لديهم
أثر إيجابي في التحكم بدرجة حرارة الجسم، ولديهم أيضا حالة جلد
أفضل، وزيادة في قياسات النمو، مقارنة مع الأطفال الذين لم يتلقوا
أي علاج موضعى. بالإضافة، لقد وجد في الدراسة الحالية أن
التهابات الدم لدى الأطفال الخدج حديثي الولادة في مجموعة الدراسة
كانت أقل نسبة، حيث بلغ 32.8% في مجموعة الدراسة مقابل 8% في
مجموعة التحكم، أيضا مستوى الدهون الثلاثية في الدم كانت أعلى

Effect of Topical Olive Oil Therapy on Preterm’s in Neonatal Intensive Care Unit
في مجموعة الدراسة مقارنة مع مجموعة التحكم، المعالجة الموضعية بزيت الزيتون قد يكون له تأثير كبير بين الأطفال الخدج حديثي الولادة، وينصح بعمل دراسة مماثلة مع زيادة عدد الأطفال، والتي يتعين القيام بها فترة زمنية أطول للوصول إلى نتائج مرضية أفضل.