



Background

- Hyperbilirubinemia is the leading cause of admission into a hospital among neonates around the globe. Common health problem seen in 60–80% of newborns (Abdellatif et al., 2020, p. 17)
- Neonatal jaundice is usually treatable, however it can lead to bilirubin encephalopathy which can progress to kernicterus. Also, incurable cases may develop permanent neurological and developmental disorders (Dağ & Yayan, 2019, p. 70).
- There are several treatment methods for infants with hyperbilirubinemia; phototherapy and blood exchange transfusion are two of these methods. Studies have shown that these treatments may control the disease, but they may cause a number of potential side effects such as: blood transfusion allergies, omphalocele, diarrhea, dehydration, skin eruption, blue baby syndrome. (Dağ & Yayan, 2019, p. 71).
- Infant massage helps reduce high bilirubin levels and come with positive effects that can improve weight gain, sleep patterns, growth and development, and autonomic nervous system functions, and it can also reduce the rates of colic and infant mortality. (Lin et al., 2015, p. 97)
- Use of massage for newborns who are treated with phototherapy for hyperbilirubinemia shows an increase in the frequency of defecation, urination, and feeding and reduced the total serum bilirubin levels (TBS). Showing that massage therapy is an effective supplementary intervention to decrease TSB levels in combination with phototherapy for newborns with hyperbilirubinemia (Korkmaz & Esenay, 2020, p. 94)

Purpose

- In neonates, what is the effect of massage therapy on jaundice babies on the reduction of bilirubin levels compared with no massage therapy.

Methods

- Inclusion Criteria:
 - Written between 2015-2020.
 - Had one nurse as an author or was published in a nursing journal.
 - Study was located in the United States or a comparable health care system.
 - Randomized Controlled Trials, Systematic Reviews
- Exclusion Criteria:
 - Articles were written in a language other than English.
 - Studies lacked a nursing author or were not published in a journal.
 - Studies were published before 2015.
- Search Process:
 - Sources: CINAHL.
 - Key words: jaundice or hyperbilirubinemia or bilirubin, massage therapy or massage or massage therapies.
 - 4 articles met all criteria to be included in the study.

Discussion

- Level of Research: Level one (systematic review)
- Current treatments for hyperbilirubinemia include phototherapy and blood transfusions in neonates are they viable and could they be more effective if combine with massage therapy.
- Massage therapy for neonates should be standard practice of care in hospital setting area, evidence has shown to be an effective method in aiding elimination of bilirubin.
- The data produced by these studies indicate that the use of massage therapy is beneficial in helping reduce high levels of bilirubin in neonates.

Results

(Dağ & Yayan, 2019, p. 73)

- Randomized controlled trial
- ($p > 0.05$)
- Study was conducted with 140 newborns who were receiving phototherapy in the neonatal intensive care unit
- Conclusion: The comparison of the bilirubin level mean scores of newborns in the intervention groups with the scores of the control group newborns showed that there was a significant difference between them. This study demonstrates that the bilirubin levels decreased most rapidly in the massage group making it effective treatment to be added one.

Comparison of the bilirubin values according to the groups.

Group N	Before the procedure	6 hours after the procedure	12 hours after the procedure
Control (n:35)	Mean ± SD 13.74 ± 3.24	Mean ± SD 11.44 ± 3.06	Mean ± SD 7.62 ± 2.54
Tub bath (n:35)	13.10 ± 2.41	7.70 ± 1.19	3.63 ± 1.50
Sponge bath (n:35)	13.13 ± 2.41	8.82 ± 1.81	4.42 ± 1.30
Massage (n:35)	14.75 ± 2.64	7.79 ± 2.04	3.82 ± 1.78
Test value	8,046	23.29	35.65
P value	0.000	0.000	0.000

(Abdellatif et al., 2020, p. 20)

- Systematic review of 363 papers retrieved through systematic research
- 27 randomized controlled trials were chosen to be included in the final quantitative analysis.
- Conclusion: Massage therapy could be an effective adjuvant to phototherapy to help reduce the time of phototherapy treatment. It however does not appear to replace the requirement for phototherapy.

(Korkmaz & Esenay, 2020, p. 99)

- Randomized controlled clinical trial
- ($p < 0.001$)
- The newborns in the intervention group had significantly lower levels of total bilirubin ($M = 9.02 \text{ mg/dl} \pm 1.27 \text{ mg/dl}$) compared with the infants in the control group ($M = 11.04 \text{ mg/dl} \pm 1.57 \text{ mg/dl}$, $p < .001$).
- Urination and defecation frequencies were greater in the newborn intervention group.
- Feeding frequencies in the intervention group ($M = 10.97 \text{ times} \pm 1.62 \text{ times}$) were significantly greater than in the control group. ($M = 9.05 \text{ times} \pm 1.82 \text{ times}$, $p < .001$).
- Conclusion: Use of massage for newborns treated with phototherapy may increase the frequency of defecation, urination, and feeding and reduce TSB levels. Massage therapy may be an effective intervention to lower TSB levels in combination with phototherapy for newborns with hyperbilirubinemia.

(Lin et al., 2015, p. 96)

- Randomized controlled trial
- ($p = 0.045$)
- Although the defecation frequency was not significantly different between the control and massage groups on the first and second days of the study, it was significantly higher in the massage group on the third day ($p = 0.04$).
- Conclusion: After the third day of the massages, the defecation frequency of the neonates receiving phototherapy and massages was significantly higher than the control group not receiving massage therapy.

Parameter	Massage group (n = 15)	Control group (n = 11)	t value	p value
D1 microbilirubine level (mg/dL)	15.6 ± 0.9 ^a	15.9 ± 1.0	-1.35	0.19
D2 microbilirubine level (mg/dL)	13.9 ± 1.2	14.5 ± 0.8	-1.36	0.18
D3 microbilirubine level (mg/dL)	10.8 ± 0.9	12.2 ± 1.8	-2.6	0.03*

Conclusions

• Strengths :

- All the studies that were found showed very similar results in very different parts of the world. Neonatal massages also showed no negative side effects when compared to other effective treatments such as phototherapy.
- There is no added cost or equipment needed for hospitals to purchase to be able to implement this practice into policy. Hospitals would only need to coordinate an inservice teaching to all nurses on their mother baby and NICU units.

• Limitations :

- This topic does have its limitations due to it being a relatively new topic for discussion and does not have ample amount of research done.
- After review of several studies, there is also no definition or method for the massages or talk about the duration of the massages.

• Implications :

- This can be implemented on every mother baby unit across the globe. Elevated bilirubin levels are extremely common among neonates, ranging from 60-80%. Therefore this safe and effective practice should be used widely. This practice can also be taught to new parents taking home neonates after birth.

• Recommendations for future studies :

- At this time, more studies need to be conducted in order to better explore the full benefit of massages on hyperbilirubinemia neonates.
- Moving forward, a standardized method and duration of massages need to be implemented due to much deviation in massage techniques. A standardized method would provide more control for the studies against externalities.
- Studies show significant benefits in both preventing jaundice and reducing bilirubin levels with no adverse side effects. Based on current research we recommend that all hospitals begin utilizing massage techniques into their practice.



References

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