



The impact of skin-to-skin contact on the nosocomial infection incidence in preterm newborns



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Epidemiology

- **15 million** premature babies are born annually all over the world - more than **1 in 10 newborns**.
- Rates of preterm deliveries:
 - **10-12%** in the United States,
 - **18%** in African countries
 - **5-7%** in European countries

[Harrison M.S., Goldenberg R.L., 2016; WHO, 2015]

Extremely and very preterm infants who stay in NICUs/neonatal departments for extended periods of time and undergo numerous invasive procedures are very susceptible to nosocomial infections

The National Institute of Child Health and Human Development

- 46% of infants born at less than 25 weeks of gestation
- 29% of infants born at 25 to 28 weeks of gestation

} have a serious nosocomial infection in the NICU

[R. Polin, L. Saiman, 2003]

Kangaroo care with skin-to-skin contact prevents the infection in term and preterm infants

- ***Preterm infants who receive Kangaroo care in comparison with neonates who have standard care (incubator, radiant warmer, or open crib), are more likely to have decreased likelihood of nosocomial infection***

[Conde-Agudelo A, Díaz-Rossello JL.,

Cochrane Database of Systematic Reviews, 2016]

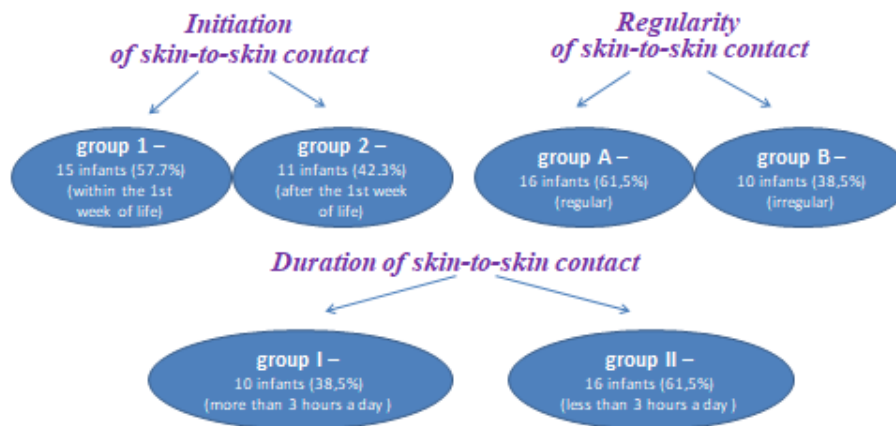
THE PURPOSE OF THE STUDY

to investigate the impact of *skin-to-skin contact* depending on its **regularity**, **duration** and **period of SSC initiation** on nosocomial infection incidence in preterm babies.



RESEARCH DESIGN

26 premature babies with GA < 29 weeks:
18 (69.23%) boys and 8 (30.77%) girls



Benefits of the SSC depending on its regularity

| | A group (n=16) | | B group (n=10) | | p | Odds Ratio (95% CI) |
|---------------------------------|-------------------------|--------|-------------------------|---------|-------|-----------------------|
| | n | % | n | % | | |
| BPD | 6 | (37.5) | 5 | (50.0) | 0.689 | 0.82 (0.34-8.26) |
| Nosocomial infection | 6 | (37.5) | 9 | (90.0)* | 0.014 | 15.0 (1.50-149.70) |
| NEC | 1 | (6.25) | 1 | (10.0) | 1.0 | 1.67 (0.09-30.06) |
| Cholestasis | 1 | (6.25) | 3 | (30.0) | 0.264 | 6.43 (0.56-73.35) |
| Artificial feeding at discharge | 7 | (43.7) | 8 | (80.0) | 0.109 | 5.14 (0.82-32.30) |
| Oxygen-dependence at discharge | 4 | (25.0) | 2 | (20.0) | 1.0 | 0.75 (0.11-5.11) |
| Daily weight gain (g) | 22.46 [19.49; 26.09] | | 20.38 [17.00; 22.51] | | 0.113 | |

* p value <0,05; 95% CI – 95 % Confidence Intervals

Benefits of the SSC depending on its duration

| | I group (n=10) | | II group (n=16) | | p | Odds Ratio (95% CI) |
|------------------------------------|-------------------------|--------|-------------------------|---------|-------|------------------------|
| | n | % | n | % | | |
| BPD | 3 | (30.0) | 8 | (50.0) | 0.428 | 2.33 (0.44-12.40) |
| Nosocomial infection | 3 | (30.0) | 12 | (75.0)* | 0.043 | 7.00 (1.20-40.83) |
| NEC | 0 | 0.0 | 2 | (12.5) | 0.508 | - |
| Cholestasis | 0 | 0.0 | 4 | (25.0) | 0.136 | - |
| Artificial feeding at discharge | 3 | (30.0) | 12 | (75.0)* | 0.043 | 7.00 (1.20-40.83) |
| Oxygen-dependence at discharge | 1 | (10.0) | 5 | (31.25) | 0.352 | 4.09 (0.40-41.66) |
| Daily weight gain (g) | 23.03 [20.48; 26.81] | | 20.18 [18.58; 23.07] | | 0.140 | |

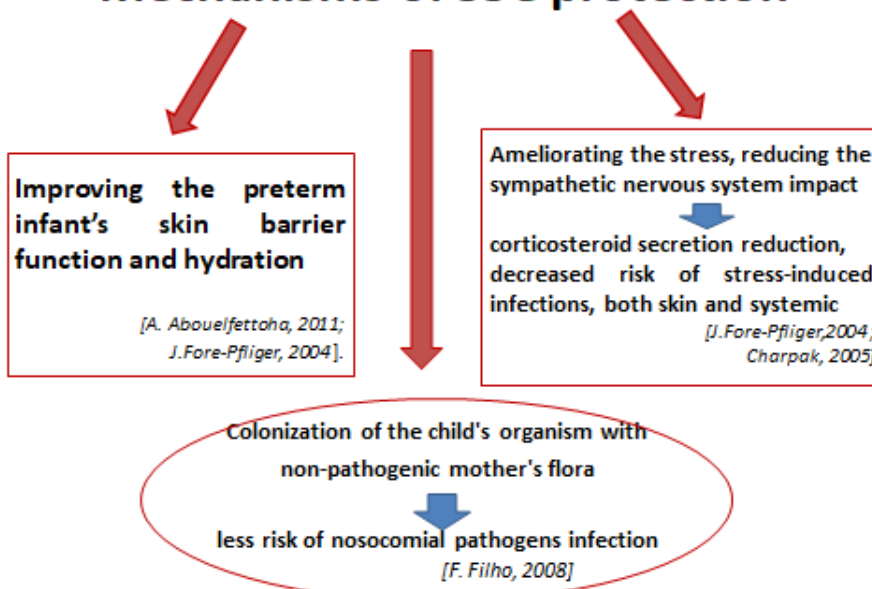
* p value <0,05; 95% CI – 95 % Confidence Intervals

Benefits of the SSC depending on period of its initiation

| | 1 group (n=15) | | 2 group (n=11) | | P | Odds Ratio (95% CI) |
|------------------------------------|-------------------------|--------|-------------------------|---------|-------|------------------------|
| | n | % | n | % | | |
| BPD | 3 | (20.0) | 8 | (72.7)* | 0.015 | 10.67 (1.70-66.72) |
| Nosocomial infection | 6 | (40.0) | 9 | (81.8) | 0.051 | 6.75 (1.06-42.84) |
| NEC | 0 | (0.0) | 2 | (18.2) | 0.169 | - |
| Cholestasis | 0 | (0.0) | 4 | (36.4)* | 0.022 | - |
| Artificial feeding at discharge | 7 | (46.7) | 8 | (72.7) | 0.246 | 3.05 (0.57-16.19) |
| Oxygen-dependence at discharge | 2 | (13.3) | 4 | (36.4) | 0.218 | 3.71 (0.54-25.59) |
| Daily weight gain (g) | 22.67 [19.84; 26.14] | | 19.63 [17.91; 22.30] | | 0.073 | |

* p value <0,05; 95% CI – 95 % Confidence Intervals

Mechanisms of SSC protection





Conclusions

Early, regular and prolonged SSC has a positive impact on the preterm baby's health preventing the nosocomial infections.

