for ROP screening on the basis of birth weight and/or gestational age. Only the first screening examination for each baby was considered. Premature babies, were randomised to one of three interventions before their screening examination: group 1 (n = 27) received 24% sucrose oral, group 2 (n = 27) received 24% sucrose with pacifier, group 3 (n = 27) received sterile water with pacifier. Pain responses were scored by using the PIPP.

Results A total of 81 infants (42 males and 39 females) were enrolled in the study. The mean birth weight was 1280 ± 316 g, gestational age was 28.7 ± 2.1 weeks and corrected gestational age at examination was 34.2 ± 2.9 weeks. The mean PIPP scores in group 1, 2, and 3 were 16.7, 11.4 and 15.1, respectively. Sucrose with pacifier (group 2) had a significantly lower mean PIPP score than group 1 and 3 (p = 0.014; 0.021, respectively).

Conclusions Sucrose combined with NNS and NNS itself reduce pain scores during screening examinations for ROP.

**Conclusions**

Sucrose versus breastfeeding for venipuncture in term infants. A randomised, prospective, controlled study with analysis of the specific cortical response

**Methods**

Randomised, prospective, controlled study. Each term newborn was randomly assigned to sucrose or breastfeeding group at day 3 during a systematic venipuncture. Change in total haemoglobin concentration in the contralateral somatosensory cortex (Near Infra-red Spectroscopy, NIRS) was assessed 10 seconds before and after the venipuncture. Neonatal Facial Coding System (NFCS) was assessed 2 min before and at the time of the venipuncture. Groups were compared using Wilcoxon test for the variations in NIRS and Chi-square test for the NFCS scores.

**Results**

113 newborns were included (sucrose: 56, breastfeeding: 57) with a mean (sd) of 39.3 weeks (0.9) for gestational age and 3370 g (478) for birth weight. 103 were analysed for the NIRS (sucrose: 55, breastfeeding: 48). Median (quartiles) of total haemoglobin concentration change was -8.5 μmol/L (-34.5; 12.5) for sucrose group and 12.3 μmol/L (-23.4; 39.3) for breastfeeding group with no statistical difference (p = 0.06). NFCS scores were significantly different with 46.8% with a painful score in the breastfeeding versus 26.8% in the sucrose (p = 0.03).

**Conclusions**

No difference were found between sucrose and breastfeeding on specific-pain brain activity during a venipuncture in term newborns. A discordance was revealed between NFCS scores and NIRS analysis.

**Background and aims**

Sucrose and breast milk during painful procedures are reported to decrease pain behavioural expression in neonates. Recent data showed a persistent cortical pain response while using the sucrose during a painful procedure. To compare the efficacy of sucrose versus breast milk for specific-pain brain activity relief during a painful procedure in neonates.

**Methods**

Randomised, prospective, controlled study. Each term newborn was randomly assigned to sucrose or breastfeeding group at day 3 during a systematic venipuncture. Change in total haemoglobin concentration in the contralateral somatosensory cortex (Near Infra-red Spectroscopy, NIRS) was assessed 10 seconds before and after the venipuncture. Neonatal Facial Coding System (NFCS) was assessed 2 min before and at the time of the venipuncture. Groups were compared using Wilcoxon test for the variations in NIRS and Chi-square test for the NFCS scores.

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**Conclusions**

No difference were found between sucrose and breastfeeding on specific-pain brain activity during a venipuncture in term newborns. A discordance was revealed between NFCS scores and NIRS analysis.
We assessed cannulation success, time to cannulate, and correct treatment identification for each participant.

**Results** 14 experienced (9 Fellows, 5 Consultants) and 9 junior (Registrars) medical staff attempted 46 cannulations. Experienced participants successfully cannulated 100% of treated and control sections with no significant difference in mean (SD) time to cannulate (98 (75) s and 97 (51) s respectively, p = 0.97). Junior participants cannulated 89% and 67% of treated and control sections respectively (p = 0.69), and mean (SD) time to cannulate was 132 (78) s and 106 (53) s respectively (p = 0.42). GTN treated arteries were correctly identified by 43% of experienced and 22% of junior participants (p = 0.47).

**Conclusions** This study suggests that topical application of GTN does not increase successful cannulation of umbilical arteries by experienced staff. More participants or prolonged GTN application time may be needed to confirm these findings in junior staff.

Moreover, the availability of better performing (Light Emitting Diode) PT devices might have contributed.

**Abstract PS-199 Table**

<table>
<thead>
<tr>
<th>Median Irradiance levels of PT devices in Dutch NICUs</th>
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<tbody>
<tr>
<td>Median irradiance level (μW/cm²/nm)</td>
</tr>
<tr>
<td>All PT devices</td>
</tr>
<tr>
<td>Overhead PT devices</td>
</tr>
<tr>
<td>Underneath PT devices</td>
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</tbody>
</table>

**Background/aims** Phototherapy (PT) is an effective treatment for hyperbilirubinemia, provided a minimum irradiance level is applied. Previously, we reported on low irradiance levels of PT devices in Dutch Neonatal Intensive Care Units (NICUs). These data were shared with all NICUs. We hypothesised that this knowledge would positively affect current applied irradiance levels. Therefore we determined irradiance levels of PT devices again in 2013.

**Methods** Irradiance levels of overhead and underneath PT devices in all 10 NICUs were measured with a Dale 40 radiometer (FlukeBiomedical, Everett, Washington, USA), in routinely applied PT practice patterns, using an infant silhouette model. The infant’s distance from the overhead device was measured.

**Results** Irradiance levels of 35 PT device-incubator combinations were measured (Table); 10 types of PT devices were in use in the 10 NICUs (8 overhead and 2 underneath). Overall irradiance levels increased (p = 0.01); irradiance levels of overhead and underneath PT devices also increased with 50% (NS) and 200% (p = 0.03), respectively. The mean (range) distance between overhead PT device and infant decreased with 7 cm to 38 (30–62) cm (p < 0.01). Minimal recommended irradiance levels of 10 μW/cm²/nm were obtained for 70% of PT devices versus ~50% in 2008 (p = 0.02).

**Conclusions** Applied irradiance levels of PT devices in Dutch NICUs have markedly improved in 2013. Current data suggest that awareness among healthcare workers regarding requirements for effective PT results in improved use of PT devices, including smaller distances between PT device and infant.