

## Research Media Watch:

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### Milk production after preterm, late preterm and term delivery; effects of different breast pump suction patterns

Human milk provides the infant with protection against infection and chronic disease and promotes optimal growth and development in a dose-response manner. However, many mothers of preterm or ill infants who are breast pump dependent, experience difficulties initiating and maintaining an adequate milk supply for their infant during the early post-partum period.

Mothers of healthy term infants have demonstrated effective milk removal using a standard breast pump suction pattern (S-BPSP). The S-BPSP consists of two phases aiming to mimic a term breastfeeding infant during established lactation. The first phase (stimulation phase) mimics the infant's behaviour before milk ejection with a regular rapid sucking rate. The second phase (expression phase) resembles the infant's sucking after the milk ejection with a slower sucking rate.

Irregular-BPSP (I-BPSP) during the initiation of lactation, pattern was based on the fact that healthy infants in the first post-partum days, before the onset of secretory activation, exhibit minimal milk flow with a mix of rapid and irregular sucking patterns. Using this pattern, mothers of preterm infants demonstrated an improved total volume of milk output and milk removal per minute.

Statistical analyzes were performed using SPSS 22.0 (SPSS, Chicago, IL,USA) was used

.Breast pump-dependent mothers (n = 130) of term (n = 19), late preterm (n = 44) and preterm (n = 67) infants were assigned to either a standard or irregular-BPSP after birth until the onset of secretory activation. Both groups used the same standard maintenance BPSP thereafter. Time to secretory activation, time to full milk production and daily milk output were compared between the standard and I-BPSP groups, and between the term, late preterm and preterm groups.

Results were mothers using the irregular-BPSP demonstrated significantly greater daily milk output and established secretory activation significantly earlier. This effect was observed in mothers of term, late preterm and preterm infants

The irregular-BPSP mimicking sucking of healthy newborns is more effective at achieving secretory activation and an earlier adequate milk supply than the standard-BPSP. The irregular-BPSP can be used successfully for mothers of preterm up to term infants who are breast pump dependent during the establishment of lactation.

**Source :** Journal of Perinatology (2016), 47 – 51

#### Comments:

I-BPSP could be used for all breast pump-dependent mothers during the first days post partum, after preterm up to term birth. And further studies are required with large number of patients to reach the recommendations .

## The effects of selective head cooling versus whole-body cooling on some neural and inflammatory biomarkers: a randomized controlled pilot study

Worldwide, hypoxic ischemic encephalopathy (HIE) is a primary cause of disability and mortality in newborns. Currently, therapeutic hypothermia (TH) is routinely used to treat moderate and severe HIE. TH is administered as selective head cooling (SHC) or whole body cooling (WBC), but it is not known if the efficacy of these 2 methods differ. Regardless of which method is used, it is recommended that TH be initiated for HIE as early as possible, preferably within 6 h of birth.

This study aimed to determine if the effects of these 2 methods on some neural and inflammatory biomarkers differ. An additional aim was to determine if the studied biomarkers are useful for predicting disability and mortality in newborns with HIE. This prospective randomized pilot study included newborns delivered after >36 weeks of gestation. SHC or WBC was administered randomly to newborns with moderate to severe HIE that were prescribed TH. The serum interleukin (IL)-1 $\beta$ , IL-6, neuron-specific enolase (NSE), brain-specific creatine kinase (CK-BB), tumor necrosis factor-alpha (TNF- $\alpha$ ), and protein S100 levels, the urine S100B level, and the urine lactate/creatinine (L/C) ratio were evaluated 6 and 72 h after birth. The Bayley Scales of Infant and Toddler Development-III was administered at month 12 for assessment of neurodevelopmental findings.

Results were SHC group included 14 newborns, the WBC group included 10, the mild HIE group included 7, and the control group included 9. All the biomarker levels in the SHC and WBC groups at 6 and 72 h were similar, and all the changes in the biomarker levels between 6 and 72 h were similar in both groups. The serum IL-6 and protein S100 levels at 6 h in the SHC and WBC groups were significantly higher than in the control group. The urine L/C ratio at 6 h in the SHC and WBC groups was significantly higher than in the mild HIE and control groups. The IL-6 level and L/C ratio at 6 and 72 h in the patients that had died or had disability at month 12 were significantly higher than in the patients without disability at month 12.

So the effects of SHC and WBC on the biomarkers evaluated did not differ. The urine L/C ratio might be useful for differentiating newborns with moderate and severe HIE from those with mild HIE. Furthermore, the serum IL-6 level and the L/C ratio might be useful for predicting disability and mortality in newborns with HIE.

**Source:** Italian Journal of Pediatrics (2015) 41:79

### Comments :

The serum IL-6 level and the L/C ratio might also be useful for identifying cases of HIE that might result in disability or mortality. Additional larger scale and longer term studies might yield more generalizable findings.

**Status of gastric lavage in neonates born with meconium stained amniotic fluid: a randomized controlled trial**

Passage of meconium is an eventual event in the postnatal period . The incidence of meconium stained amniotic fluid (MSAF) ranges from 5 to 12 % . A proportion of infants born with MSAF may swallow meconium and develop nausea, retching, vomiting, poor sucking, and secondary aspiration of meconium following vomiting in early neonatal period.

Neonates born with meconium stained amniotic fluid (MSAF) can develop feed intolerance during first few days of post -natal period. A randomized controlled trial was conducted with the objectives of to find out the incidence of feed intolerance in vigorous neonates with MSAF who received gastric lavage (GL) as compared to those in whom it was not performed.

This was a randomized controlled trial on 500 neonates satisfying the inclusion criteria, 230 were reallocated to GL and 270 to no lavage group

through computer generated random numbers.

Results were no significant difference in the incidence of vomiting was found between GL and no lavage group (8.7 % vs 11.5 %, p = 0.305). Feed intolerance had no relationship with gestational age, gender, birth weight and mode of

delivery. No neonates of GL group developed any complications related to the procedure

Thus, it may be concluded that gastric lavage is not required in neonates born with MSAF.

**Source:** Italian Journal of Pediatrics (2015) 41:85

**Comments :**

As such no gastric lavage is required in vigorous neonates born through MSAF to avoid feeding intolerance. This will reduce the cost of care and save the time of paramedical staff.

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