between intrauterine growth inhibition and NO activity in late pre-term infants.

**Methods** Newborns with gestational age of 34–36 weeks and birth weight of 1200–2600 g were allocated to two groups: 21 infants with normal growth parameters were classified as first group and 15 intrauterine growth restricted (IUGR) infants were included in second group. Gestational age was assessed by the last menstrual period and confirmed by scale of Ballard et al. Plasma and urine samples of infants were collected on the first day of life. Nitric oxide concentration quantified by principle based on using the enzyme Nitrate Reductase to convert nitrate to nitrite.

**Results** Mean plasma nitrat products were higher (p<0.05) in second group infants (42.6±7.3 µM/L), than in first group (59±7.3 µM/L). Statistically true rising (p<0.01) was noted in urine NO level of IUGR infants, where mean NO level was 1.4 times higher compared with first group newborns.

**Conclusion** Intrauterine growth retardation is associated with high NO production of infants at an early neonatal period, which might indicate intrauterine activation of NO sources of fetus.

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**Conclusion** After orchiopexy, expected differences were found in both testes in the affected patients. Not a consequence of surgery alone, but more likely a common problem of both testes in the affected patients.

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**Background** Iron deficiency remains a major nutritional problem among infants and young children in India. The tablet/syrup-based programs do have logistic, supply and compliance challenges. Tablet/Syrup may have increased risk of free iron in blood, oxidative stress and risk of infections.

**Objective** In a community based RCT we evaluated 3 approaches of iron delivery for impact on iron status, pro and anti-inflammatory interleukins and non-transferrin bound iron (NTBI) with 30 day intervention.

**Methods** 300 children 22–34 months were enrolled and randomized to receive either iron fortified biscuit (n=74), iron tablet (n=77), iron+ zinc tablet (n=74) or placebo (n=75) for 30 days.

**Results** Delivery of iron through biscuit showed better impact on hemoglobin (Mean Diff: 0.60; 95 % CI: 0.16–0.14) and other hematological markers like RDW, MCV and MCH at 30 day post supplementation. The NTBI estimation at day 1 and 30 post supplementation, 3 hours after ingestion of supplement dose; an indicator of oxidative stress caused by dose after iron status repletion, suggested the lowest burden with biscuit (2 %) and a higher burden with supplements (6–7 %). At day 30 there was no effect on interleukins in the biscuit group; increase in IL-6/II10 in iron tablet, increase in IL-5/II10 in iron+ zinc tablet group.

**Conclusion** Providing iron through fortified biscuits was as efficient and effective in improvement of iron status and hematological markers as iron tablets. Biscuit was marginally better for NTBI or immune response. The benefit of using biscuits needs to be evaluated in a larger community based effectiveness program.

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**Background** In developing countries, information is limited on concentration of breastmilk zinc, total amount of zinc transferred to infants through breast milk and whether zinc transfer through breastmilk differs among appropriate-for-gestational-age (AGA) and small-for-gestational-age (SGA) infants at different times post-partum.

**Aims** To measure breastmilk zinc transfer through breastmilk, using deuterium “dose-to-mother” technique, in mothers of AGA and SGA infants.

**Methods** Forty-six mother-infant pairs were recruited (20 AGA and 26 SGA infants). Each mother-infant pair was studied three times, at 4, 12 and 24 weeks post-partum. In each round, two-week studies of breast milk transfer were carried out, using the deuterium oxide “dose-to-mother” technique. Breast milk samples were collected on days 1 and 5 of each round for milk zinc concentration.

**Results** Mean (±SD) birth weight and length were 3.02±0.2 kg and 48.2±1.2 cm for AGA infants and 2.34±0.20 kg and 46.2±1.1 cm for SGA infants. Breast milk intake increased gradually with time post-partum, and was marginally greater among AGA infants only at 4 weeks (p=0.06). Breast milk zinc concentration decreased when the infants grow (p<0.001), but differed between neither of the groups. Zinc transfer through breast milk decreased significantly with age in both the groups, but did not differ (p<0.001).

**Conclusions** Breast milk zinc concentration among Bangladeshi mothers was similar to values reported for women from wealthier countries, and there was no relationship between infant birth weight category and milk zinc concentration or milk zinc transfer.