

## Role of Zinc in Catch-Up Growth of Low-Birth Weight Neonates

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**Abstract :** Low-birth-weight is a challenging public health problem. Aim: to clarify role of zinc on enhancing catch-up growth of low-birth-weight and find out a proposed relationship between zinc effect on growth and the main growth hormone mediator, IGF-1. Methods: Study is a double-blind-randomized-placebo-controlled trial conducted on low-birth-weight-neonates delivered at Ain Shams University Maternity Hospital. It comprised 200 Low-birth-weight-neonates selected from those admitted to NICU. Neonates were randomly allocated into one of the following two groups: group I: low-birth-weight; AGA or SGA on oral zinc therapy at dose of 10 mg/day; group II: Low-birth-weight; AGA or SGA on placebo. Anthropometric measurements were taken including birth weight, length; head, waist, chest, mid-upper arm circumferences, triceps and sub-scapular skin-fold thicknesses. Results: At 12-month-old follow-up visit, mean weight, length; head (HC), waist, chest, mid-upper arm circumferences and triceps; also, infant's proportions had values  $\geq$  10th percentile for weight, length and HC were significantly higher among infants of group I when compared to those of group II. Oral zinc therapy was associated with 24.88%, 25.98% and 19.6% higher proportion of values  $\geq$  10th percentile regarding weight, length and HC at 12-month-old visit, respectively [NNT = 4, 4 and 5, respectively]. Median IGF-1 levels measured at 6 months were significantly higher in group I compared to group II (median (range): 90 (19 - 130) ng/ml vs. 74 (21 - 130) ng/ml, respectively,  $p=0.023$ ). Conclusion: Oral zinc therapy in low-birth-weight neonates was associated with significantly more catch-up growth at 12-months-old and significantly higher serum IGF-1 at 6-month-old.

**Keywords :** low-birth-weight, zinc, catch-up growth, neonates

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