

Assessment of Zinc Supplementation on Neonatal Linear Growth

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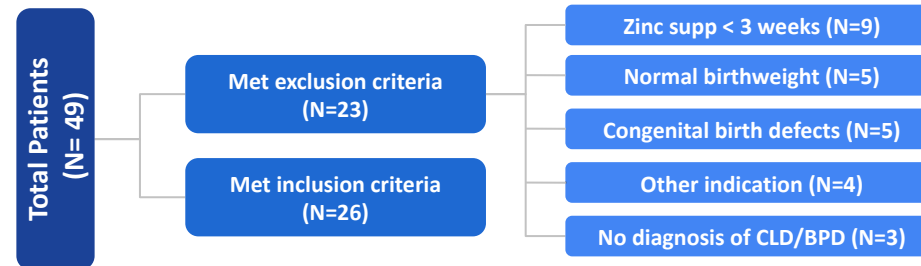
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Background:

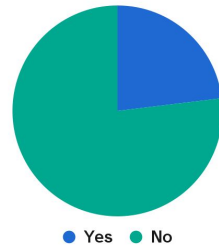
- Zinc is a vital trace element that supports bone growth
- The majority of fetal zinc absorption occurs in the third trimester of pregnancy
- Risk factors for growth failure and zinc deficiency include prematurity, small for gestational age, and chronic lung disease
- Concurrent use of corticosteroids, diuretics, and sodium supp. can alter zinc absorption

Methods:

- Single-center, retrospective study
- July 1, 2018 - July 1, 2020
- **Primary Endpoint**
 - Assess effect of zinc supplementation on linear growth outcomes (z-scores) in neonates with bronchopulmonary (BPD) dysplasia or chronic lung disease (CLD)
- **Secondary Endpoint**
 - Amount of zinc supplementation, weight gain, duration of therapy, use of diuretics, corticosteroids, hyponatremia +/- sodium supp., alkaline phosphatase levels

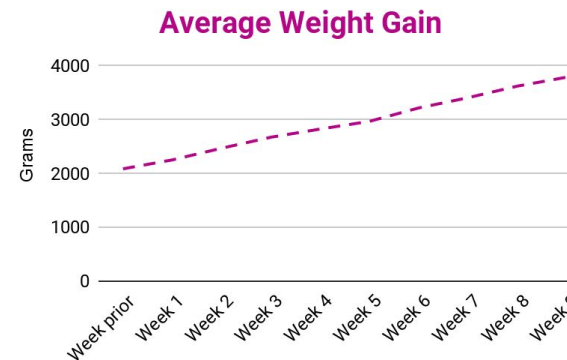


Corticosteroids



Duration of Zinc Therapy	Number of Patients	P-value
3 weeks	6	0.39
6 weeks	5	0.13
Discontinuation	6	0.72

Time of z-score	n	Mean	p-value
After birth	26	-0.65	<0.001
3 wks before	26	-2.27	0.17
1 wk before	26	-2.23	0.12
Baseline	26	-2.31	0.03
3 wks after	26	-2.42	0.001
6 wks after	18	-2.41	0.004
Discontinuation	26	-1.94	Reference



Results:

- Average dose of zinc sulfate: 1.55 mg/kg/day
- Duration of therapy ranged from 21 to 132 days with a median of 47 days
- Total of 23 patients (88.5%) received diuretics during therapy
- Corticosteroid therapy did not effect length z-scores
- Average weight gain was about 150g/week
- Statistically significant difference in z-scores after 3 weeks, 6 weeks, and discontinuation of supplementation

Limitations:

- Small sample size
- Change in practice from using measuring tape to length boards for measuring length
- Variable zinc content in daily nutrition

Conclusion:

- Zinc supplementation showed improvement in linear growth (z-scores) and consistent weight gain throughout therapy