Maternal Profile in Infants with Musculoskeletal Infections- Evaluation in A Tertiary Care Centre

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Abstract:
BACKGROUND: Musculoskeletal infections in pediatric age group account for 23% of the total infections. The most common musculoskeletal infections in children are Osteomyelitis and Septic Arthritis. Maternal health primarily impacts infants as they get immunity from mothers. In this context, this study was done to evaluate maternal parameters which include serum proteins, hemoglobin levels, maternal history, mode of delivery, type of feed to infant.

MATERIAL AND METHODS: 21 infants were admitted in GMC Jammu with musculoskeletal infections over a period of 9 months who underwent treatment. Their mothers were evaluated thoroughly and various investigations were done.

RESULTS: 32% of the mothers suffered from Gestational Diabetes Mellitus, 24% from anemia, 10% from PIH and 3% from eclampsia. 70% of infants took birth by vaginal delivery while 30% were by cesarean section. 80% of the infants were breastfed whereas 20% of them were fed artificially. Serum Globulin was low in majority of mothers. Serum Albumin was raised in all the mothers.

CONCLUSIONS: Mother’s health had a positive correlation with the infant’s nutritional status & susceptibility to infections.

KEYWORDS: Musculoskeletal infections, Maternal health, Serum albumin, Serum globulin

INTRODUCTION
Musculoskeletal infections in pediatric age group account for 23% of the total infections. These include osteomyelitis, septic Arthritis, pyomyositis, Psoas Abscess, Skeletal tuberculosis. Infants are prone to infections because of naive immune system, umbilical sepsis, skin infections, circumcisions, eczematous lesions. Prematurity, caesarian section, neonatal jaundice and invasive procedures during hospitalization like venipunctures also predispose them to acquire infections. Nutritional deficiency of mother is also attributed in some of the infants acquiring infections. Maternal health primarily impacts infants they get immunity from mothers in the form of immunoglobulins primarily Ig G through placenta & from colostrum as Ig A. In this context, this study was done to evaluate maternal parameters which include serum proteins, hemoglobin levels, maternal history, mode of delivery, type of feed to infant.

OBJECTIVE
Assessment of mothers in infants with musculoskeletal infections in a tertiary care centre.
MATERIAL AND METHODS
21 infants were admitted in GMC Jammu with musculoskeletal infections over a period of 9 months who underwent treatment. Their mothers were evaluated thoroughly. Maternal history was taken which included obstetrical history, history of gestational diabetes mellitus (GDM), Pregnancy induced hypertension (PIH), Anemia, mode of delivery (vaginal delivery/caesarean), type of feed (breast feed/artificial feed). Serum proteins of mothers were checked i.e. serum albumin, serum globulin, Albumin globulin ratio (AGR).

RESULTS
Maternal history of these infants were recorded and it was found that 32% of the mothers suffered from Gestational Diabetes Mellitus, 24% from anemia, 10% from PIH and 3% from eclampsia (Fig).

![Bar chart depicting maternal history of neonatal patients](https://via.placeholder.com/150)

Average birth weight of infants was 2.28 kg.
52% of infants had birth order 2, 28% with birth order 3 and 20% with birth order 1.
In mode of delivery, 70% of infants took birth by vaginal delivery while 30% were by caesarean section.

80% of the infants were breastfed whereas 20% of them were fed artificially.

Serum Globulin was low in majority of mothers (68%) while Albumin Globulin Ratio was high in most of the mothers (90%)
Serum Albumin was raised in all the mothers
Mean Hemoglobin levels of mothers was 8.08 g/dl.

<table>
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<th>Maternal Parameters</th>
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<th>Normal values</th>
<th>Below values</th>
<th>Normal values</th>
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<tr>
<td>Serum Globulin</td>
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<tr>
<td>Albumin Globulin Ratio</td>
<td>19</td>
<td>1</td>
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DISCUSSION
Domanski et al, 2018 stated in a study that GDM results in serious negative outcomes at birth for mothers and their offspring, with possible long-term effects on their health. Wu CS et al, 2009 stated that Preeclampsia was associated with an increased risk of being hospitalized for a number of diseases, especially in the children born at term. Abu-Ouf NM et al, 2015 stated that throughout pregnancy, iron deficiency anemia adversely affects the maternal and fetal well-being, and is linked to increased morbidity and fetal death. In contrast to the study, Lee et al, 2020 stated that 50% reduction of infection rates in infants who are fully breastfed can be expected in the first six months of life. Yang C et al, 2016 in a study stated that hypoalbuminemia was frequent among neonates with sepsis. Lower albumin levels might be associated with a poorer prognosis. Albumin levels could be appropriate for the diagnosis and prognosis of late preterm neonates with infections.

CONCLUSION & SUMMARY
Mother’s health had a positive correlation with the infant’s nutritional status & susceptibility to infections. In this study, 69% of mothers were found with history of GDM, PIH & anemia while 31% were not affected. Vaginal delivery (70%) was the predominant mode & breast feed given in 80% of infants. Serum Globulin was low in majority of mothers (68%) while Albumin Globulin Ratio was high in most of the mothers (90%).

REFERENCES
