

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

Sachin Kudyar¹, Bias Dev²

^{1,2}Department of Orthopaedics, Government Medical College Jammu

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 caesarean 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 veni punctures 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**).

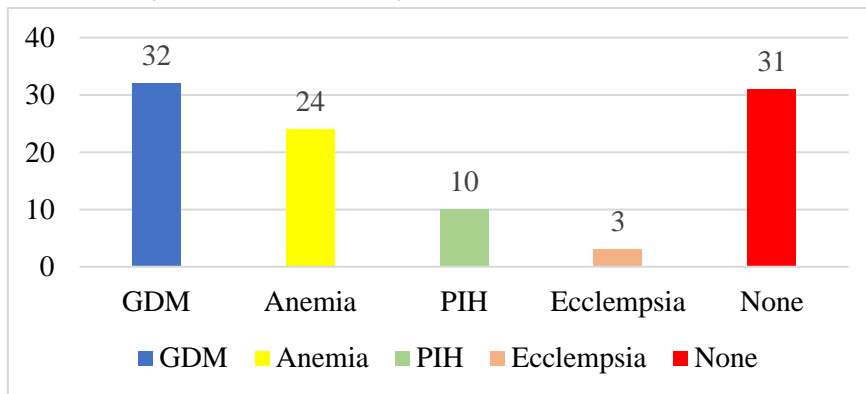


Figure – Bar chart depicting maternal history of neonatal patients

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- Maternal parameters

Maternal Parameters	Raised values	Normal values	Below values	Normal
Serum Albumin	21	0	0	
Serum Globulin	0	6	15	
Albumin Globulin Ratio	19	1	1	

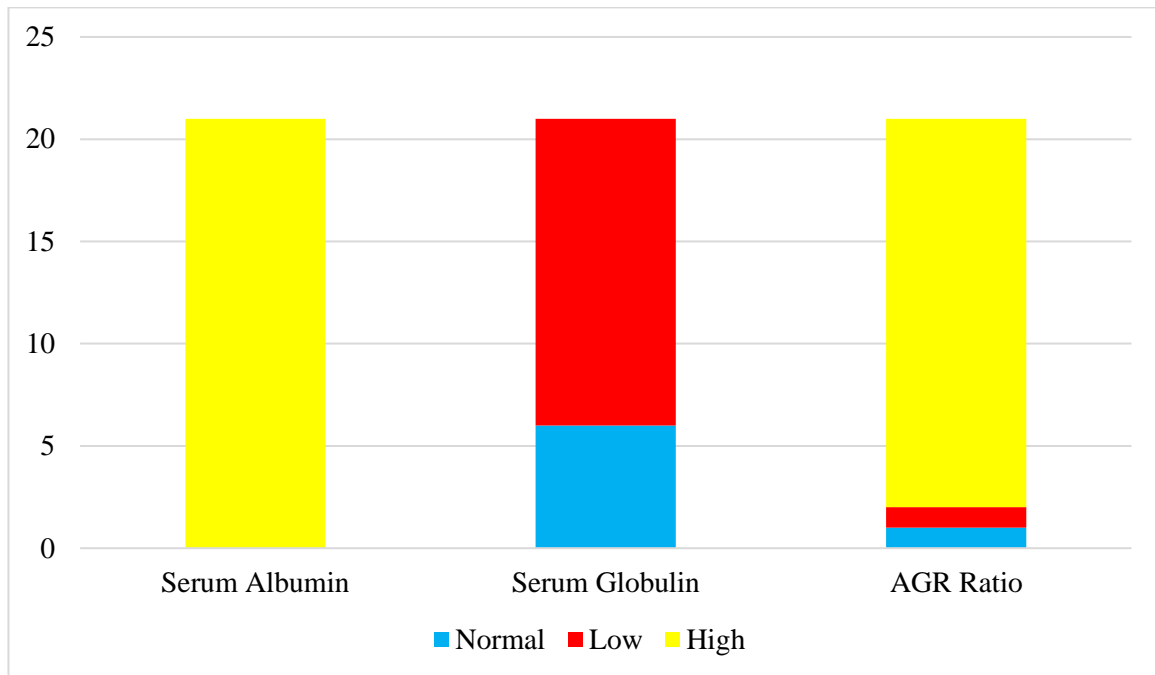


Figure 14– Maternal history of serum globulin and AGR levels

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

1. Domanski, G., Lange, A.E., Ittermann, T. *et al.* Evaluation of neonatal and maternal morbidity in mothers with gestational diabetes: a population-based study. *BMC Pregnancy Childbirth* 18, 367 (2018).
2. Wu CS, Nohr EA, Bech BH, et al. Health of children born to mothers who had preeclampsia: a population-based cohort study. *Am J Obstet Gynecol* 2009;201:269.e1-10.

3. Abu-Ouf NM, Jan MM. The impact of maternal iron deficiency and iron deficiency anemia on child's health. *Saudi Med J.* 2015 Feb;36(2):146-9.
4. Lee, M.K.; Binns, C. Breastfeeding and the Risk of Infant Illness in Asia: A Review. *Int. J. Environ. Res. Public Health* 2020, *17*, 186.
5. Yang C, Liu Z, Tian M, Xu P, Li B, Yang Q, Yang Y. Relationship Between Serum Albumin Levels and Infections in Newborn Late Preterm Infants. *Med Sci Monit.* 2016 Jan 9;22:92-8.