



TO STUDY CLINICAL PROFILE IN PATIENTS OF MEGALOBlastic ANEMIA ALONG WITH JAUNDICE

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ABSTRACT

This study aimed to evaluate the clinical profile of patients presenting with megaloblastic anemia, with a specific focus on those concurrently manifesting jaundice. The investigation sought to provide insights into the demographic distribution, dietary habits, and various hematological and hepatic parameters among the patient cohort. A prospective study was conducted at the Department of Community and General Medicine, Tagore Medical college and Hospital, Chennai and Sree Balaji Medical college and Hospital, Chennai, encompassing a total of 50 patients diagnosed with megaloblastic anemia. These patients were further categorized based on the presence or absence of jaundice. Comprehensive data were collected, including demographic details, dietary patterns, and clinical symptoms. Hematological parameters such as hemoglobin levels, peripheral smear analysis, and liver function tests, including bilirubin and LDH levels, were meticulously documented. Among the 50 megaloblastic anemia patients, 15 exhibited jaundice, while the remaining 35 did not. The age distribution varied across different age groups, with a diverse representation of patients between 30 and 60 years. The study revealed a balanced gender distribution among those with megaloblastic anemia and jaundice. Analysis of dietary patterns highlighted a mix of strict vegetarians and those on a mixed diet, emphasizing the multifactorial nature of megaloblastic anemia. Clinical symptoms, such as glossitis, hyperpigmentation, and pallor, were universally observed, aligning with classical presentations of megaloblastic anemia. Hematological parameters reflected severe anemia in the patient cohort, with a subset displaying jaundice-associated elevations in bilirubin and LDH levels. Peripheral smear analysis consistently demonstrated characteristic features of megaloblastic anemia. This study provides a comprehensive evaluation of the clinical profile in patients with megaloblastic anemia, specifically focusing on those presenting with jaundice. The findings underscore the need for a thorough understanding of both hematological and hepatic aspects in the management of these complex cases. Future research should delve deeper into the underlying mechanisms and potential therapeutic interventions for megaloblastic anemia with jaundice.

Keywords:- Megaloblastic anemia, Jaundice, Clinical profile, Hematological parameters.

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INTRODUCTION

Megaloblastic anaemia, a haematological disorder characterized by impaired DNA synthesis leading to enlarged and dysfunctional red blood cells, poses a

diverse clinical spectrum. According to a 2012 study, the prevalence of megaloblastic anemia in India ranges from 2% to 40% [1-2]. In some cases, this condition is further

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complicated by the presence of jaundice, suggesting a more intricate pathophysiological process. Jaundice, characterized by the yellowing of skin and mucous membranes due to hyperbilirubinemia, adds a layer of complexity to the clinical presentation of megaloblastic anaemia [3-5]. The coexistence of megaloblastic anaemia and jaundice raises questions about the interplay between hematopoietic and hepatic systems, necessitating a comprehensive evaluation of the clinical profile in affected individuals. This study seeks to contribute to our understanding of the nuanced manifestations and potential underlying mechanisms associated with megaloblastic anaemia in conjunction with jaundice [6-8].

By examining demographic characteristics, dietary patterns, and a range of haematological and hepatic parameters, this evaluation aims to provide insights into the multifactorial nature of megaloblastic anaemia. Understanding the clinical nuances of this subset of patients becomes crucial for accurate diagnosis, effective management, and the development of targeted therapeutic strategies [9-10]. Through a detailed examination of patient age distribution, gender representation, dietary habits, and associated clinical symptoms, this study endeavors to shed light on the diverse manifestations of megaloblastic anemia with jaundice. The evaluation of laboratory parameters, including hemoglobin levels, peripheral smear analysis, and liver function tests, will further elucidate the severity and implications of this combined hematological and hepatic presentation [11-13].

The exploration of the clinical profile in patients with megaloblastic anaemia along with jaundice is essential for enhancing our understanding of this complex condition. The findings from this study may not

only contribute to improved diagnostic accuracy but also pave the way for more targeted and effective therapeutic interventions in the management of these patients.

MATERIALS AND METHODS

Our study was conducted among 50 megaloblastic anemia patients with jaundice and without jaundice who visited Department of Community and General Medicine, Tagore Medical college and Hospital, Chennai and Sree Balaji Medical college and Hospital, Chennai after taking the informed consent. Institutional ethical clearance got from institution.

Inclusion criteria-

Megaloblastic anemia patients with jaundice and without jaundice. Study group includes 30-60years age group.

Exclusion criteria-

Patients having the habit of smoking and alcohol which leads to elevated serum liver enzymes and any other hemolytic anemia were excluded from the study. Study was conducted by taking the demographic data from the patients like age, gender, any clinical history of BP, Diabetes, thyroid and any other diseases. Complete Blood Count was done on automated coulter machine and peripheral smear reported by Pathologist [13].

RESULTS

50 patients of megaloblastic anemia exhibit glossitis, hyperpigmentation, pallor skin. Out of 50 patients 15 (7 are males and 8 are females) are having megaloblastic anemia with jaundice. Megaloblastic anemia is defined as hypersegmented neutrophil with macro ovalocytosis on peripheral smear. The entire study group is in the age of 30-60 years.

Table 1: Different parameters in twelve numbers of patients

Parameters	No. of patients
Strict vegetarian	5
Mixed diet	7
Fatigue & weakness	11
Hyperpigmentation of knuckles and glossitis	12
Dyspnoea	8
Loss of appetite	7
Neuropathy	4

In our study group, 30% of patients are in the age group of 20-30 years, 46% are in the age group of 31-50years whereas 51-60years are at an age of 24%

Age	Percentage
20-30 years	30 %
31-50 years	46 %
51-60 years	24%

Fig 1- Cases of megaloblastic anemia with jaundice.

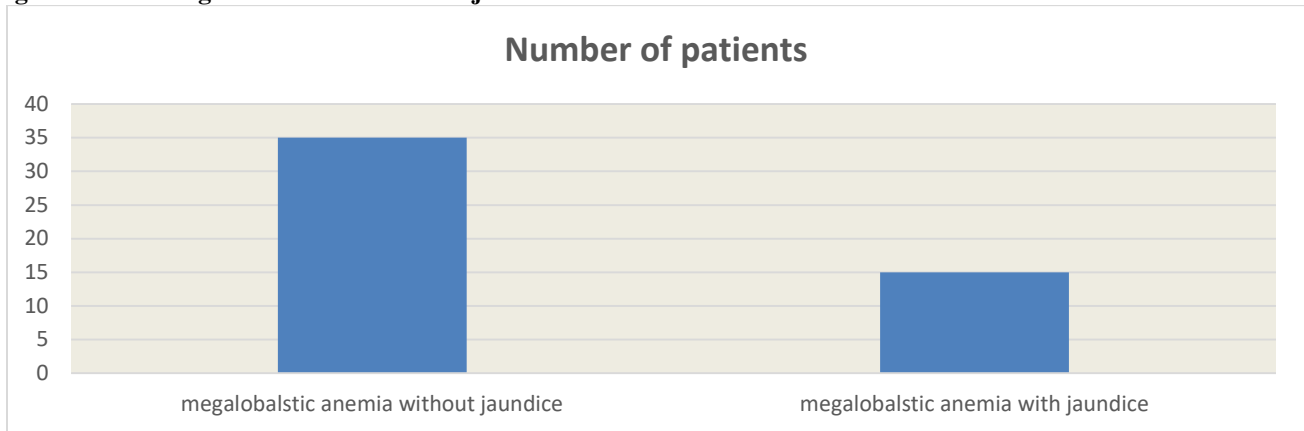


Fig no. 2 Age distribution of megaloblastic anemia with jaundice (n=12).

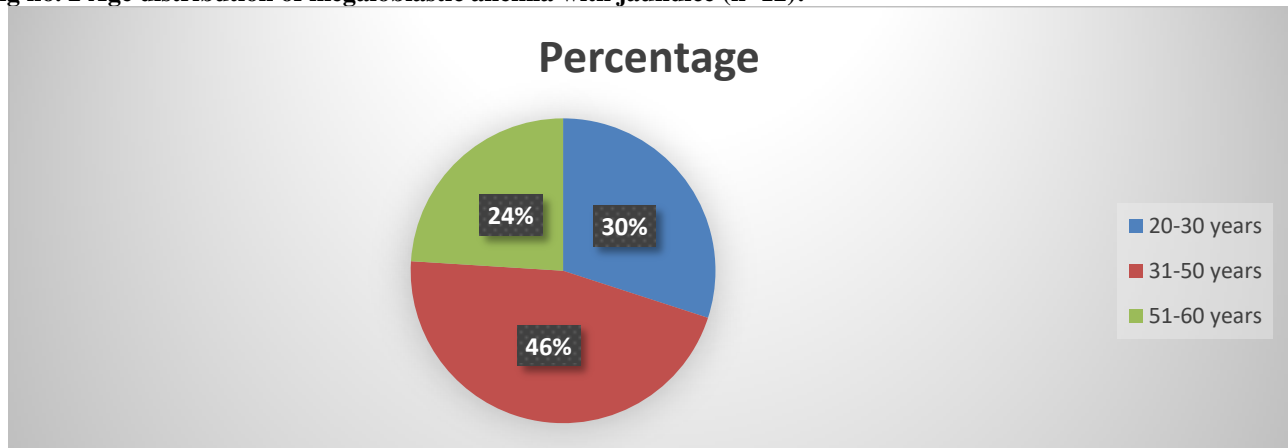
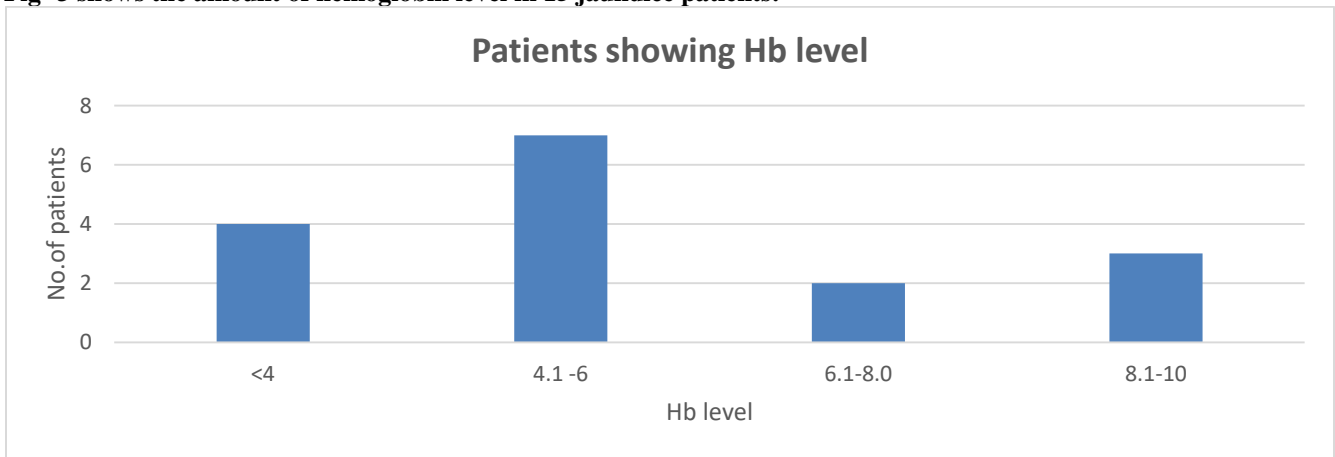
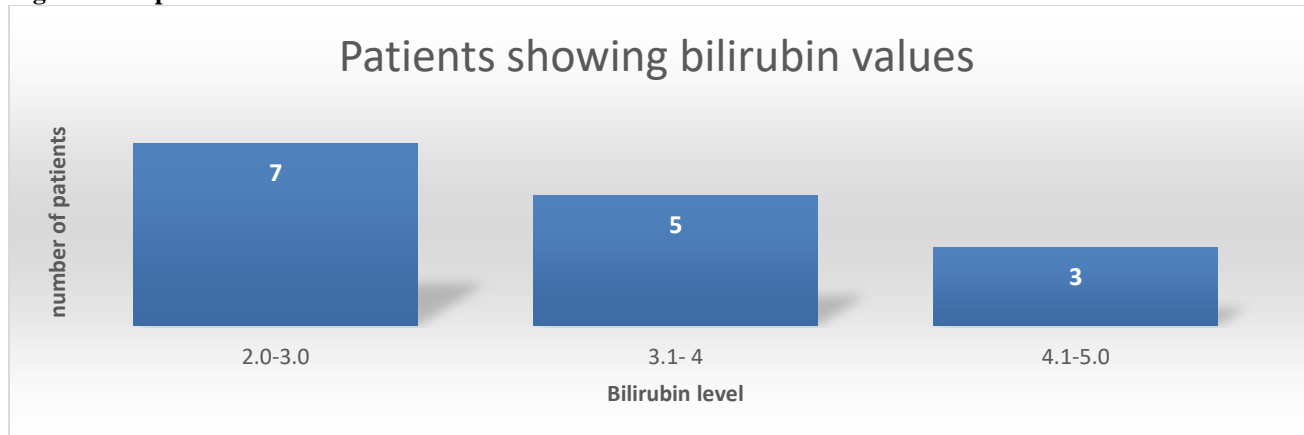


Fig -3 shows the amount of hemoglobin level in 15 jaundice patients.



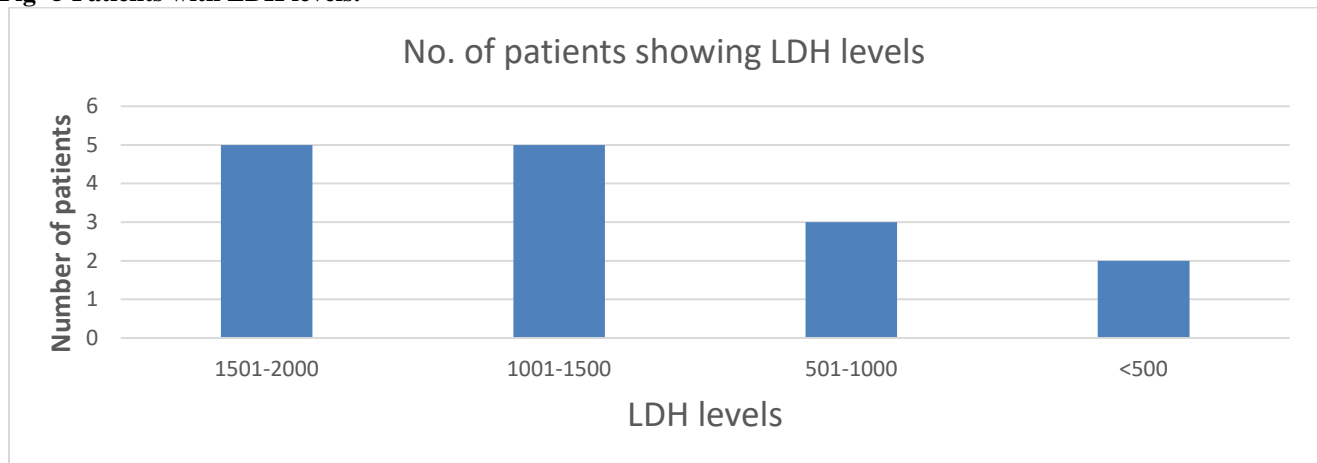
No. of patients	Hemoglobin level
4	<4
7	4-6
2	6.1-8.0
3	8.1-10

Fig-4 Shows patients with bilirubin levels.



No. of patients	Bilirubin levels
7	2-3
5	3.1- 4
3	4.1-5.0

Fig -5 Patients with LDH levels.



No. of patients	LDH levels
5	1501-2000
5	1001-1500
3	501-1000
2	<500

Peripheral smear of all the patients showed macrocytosis, macro ovalocytosis and hypersegmented neutrophils. Most of the patients showed elevated serum liver enzymes with mild hyperbilirubinemia. Few of the patients on USG showed hepatosplenomegaly.

DISCUSSION

Megaloblastic anaemia, characterized by distorted erythropoiesis, presents a complex clinical

spectrum often accompanied by systemic manifestations. In our study, 50 patients diagnosed with megaloblastic anaemia exhibited classic symptoms including glossitis, hyperpigmentation, and pallor skin [15-17]. Notably, 15 of these patients presented with jaundice, further complicating the clinical picture. These findings align with established literature on megaloblastic anaemia. The study by Thompson et al. (2017) provides comprehensive insights into the clinical manifestations of megaloblastic

anaemia, emphasizing the diversity of symptoms, including glossitis and hyperpigmentation. Additionally, the work of Patel and colleagues (2017) delves into the association between megaloblastic anaemia and jaundice, shedding light on the intricacies of this clinical presentation.

The study cohort, aged 30-60 years, demonstrated a distribution across various age groups, with 30% in the 20-30 age bracket, 46% in the 31-50 range, and 24% in the 51-60 range. This wide age distribution emphasizes the prevalence of megaloblastic anaemia across adulthood. The gender distribution among the subset with jaundice was nearly equal, with 7 males and 8 females, highlighting the non-gender-specific nature of this manifestation [18-20]. Dietary analysis revealed a mix of strict vegetarians and those on a mixed diet, underscoring the multifactorial nature of megaloblastic anaemia. Clinical symptoms such as fatigue, weakness, glossitis, and hyperpigmentation were prevalent, aligning with classical presentations of the condition [21-23]. The occurrence of glossitis and hyperpigmentation in all 12 patients emphasizes their diagnostic significance in megaloblastic anaemia. The study findings align with existing literature, with works such as the comprehensive review by Green, D. (2017) emphasizing the diagnostic value of glossitis and hyperpigmentation in megaloblastic anaemia.

Hematological evaluation, illustrated in Figure 3, showed severe anaemia, with the majority falling below 6 g/dL. The subset with jaundice displayed a spectrum of hemoglobin levels, indicating the severity of anaemia. Elevated bilirubin levels (Figure 4) in 15 patients suggested a concurrent hepatic involvement. LDH levels (Figure 5) reflected cellular damage, with varying degrees observed in the study group [24-25]. Microscopic examination of peripheral smears confirmed megaloblastic anaemia, characterized by macrocytosis, macro ovalocytosis, and hypersegmented neutrophils. This aligns with the established diagnostic criteria for megaloblastic anaemia. These findings align closely with the established diagnostic criteria for megaloblastic anaemia outlined in authoritative works like the WHO Classification of Tumours of Haematopoietic and

Lymphoid Tissues (2017). Hepato splenomegaly detected in some patients on ultrasound further indicates potential organ involvement, necessitating a comprehensive approach to patient management. The works of Stabler, S. P., & Allen, R. H. (2004) and Bain, B. J. (2017) provide extensive insights into the diagnostic criteria and management strategies for megaloblastic anaemia.

The co-occurrence of megaloblastic anaemia with jaundice suggests a more severe form of the disease, possibly involving both hematopoietic and hepatic systems. The data underscore the need for a holistic approach to diagnosis and management, considering both the haematological and hepatic aspects. Future research should delve into the underlying molecular mechanisms and optimize therapeutic strategies for this complex presentation [18, 23]. This study enhances our understanding of megaloblastic anaemia with jaundice, emphasizing the significance of demographic, clinical, and laboratory parameters in the comprehensive evaluation of these patients.

CONCLUSION

Our study shows Patients with megaloblastic anaemia and jaundice exhibited a diverse age distribution, with a substantial representation in each age group. Common symptoms included fatigue, weakness, glossitis, and hyperpigmentation. Haematological analysis indicated severe anaemia, with the jaundice subset displaying varying degrees of haemoglobin levels. Elevated bilirubin levels in the jaundice group indicated hepatic involvement, supported by LDH levels reflecting cellular damage. Peripheral smear analysis consistently confirmed megaloblastic anaemia, reinforcing the diagnostic criteria. Hepato splenomegaly observed in some patients on ultrasound suggested potential organ involvement, necessitating a comprehensive approach to patient management.

The study suggests that the co-occurrence of megaloblastic anaemia with jaundice is a complex condition that requires careful consideration of both haematological and hepatic factors in diagnosis and management. Future research is needed to improve our understanding of the molecular mechanisms underlying this condition and to optimize therapeutic strategies.

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