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INTERPRETATION OF BONE MARROW FINDINGS IN CASE OF PYREXIA OF UNKNOWN ORIGIN – A STUDY FROM JHARKHAND REGION.

Pathology

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ABSTRACT

BACKGROUND : Pyrexia of unknown origin (PUO) is a diagnostic problem in clinical practice, while diagnosis may remain obscure for several weeks. The role of bone marrow examination is crucial in the diagnostic approach.

METHOD :-Total 110 patients having PUO were examined. Their bone marrow aspiration by Salah needle and biopsy by 11G trephine biopsy needle was performed.

RESULT :-A definitive diagnosis could be achieved in 92 (84%) Patients. Fifty six patients had infectious etiology with tuberculosis being the commonest cause of PUO.

CONCLUSION :-Bone Marrow examination showed a good diagnostic yield in evaluation of pyrexia of unknown origin.

KEYWORDS

INTRODUCTION :-

Pyrexia of unknown origin is a common disease world wife.[1]. When body temperature is 101^0F or > 101^0F on several occasion for more than 3 weeks and failure to reach a diagnosis despite 1 weeks of investigation is known as PUO [2]. Bone marrow examination is performed as a part of blind investigation of PUO [3]. There are more than 200 disease that produce prolonged fever or recurrent febrile illness having easy diagnosis.

In developing country like India where patients cannot afford costly investigations: Bone marrow is very useful for diagnosis. In HIV patients also bone marrow biopsy [4,5] is an important diagnostic procedure. In case of Infections like tuber-culosis, bone marrow biopsy may demonstrate granuloma and organism. [6,7].

Detailed history and examinations help much in diagnosis. [8,9]. The present study was planned to study the usefulness of bone marrow examination in diagnosing PUO and to know the current spectrum of diseases. It was performed at Rajendra Institute of Medical Sciences Ranchi.

MATERIAL AND METHOD :-

This was a prospective study conducted over a period of Six months (Oct 2017 to March 2018) in the department of Pathology RIMS, Ranchi. Out study got approval from ethical review board. Total 110 patients were examined who showed PUO. A number of diagnostic workup was required to retain the diagnosis of PUO. The minimum workup included history taking clinical examinations, routine laboratory tests, urine analysis, urine culture, chest radiography and abdominal ultrasonography. The routine laboratory tests included complete blood count including differential leukocyte and platelet count, routine blood chemistry including lactate dehydrogenase measurement of bilirubin and lives enzyme levels assessment of erythrocyte sedimentation rate, rheumatoid factor detection, angiotensin – converting enzyme levels, routine blood culture while not receiving antibiotics, cytomegalovirus. Ig M antibody and heterophile antibody tests, tuberculin skin tests and HIV serologic analysis. Finally, the urine analysis included microscopic analysis and culture.

Bone marrow aspiration was done from anterior superior iliac spine in patients was older than one year. If there was failure than aspiration was done from either posterior superior iliac spine or sternum. Bone marrow aspiration was done by using salah needle and trephine biopsy was done by using 11 G trephine biopsy needle.

RESULTS :-

Demographic characteristics of Patients:

TABLE 1 . Demographic details of the patients

Mean age	36 +/- 17.4 years
Sex	Male- 71%, Female – 29%
Residence	Rural – 69% Urban – 31%
Range of duration	28 to 400 days Mean 105 days

Out of 110 patients studied 78 were male and 32 were female. The mean age was 36+/- 17.4 years. The range of duration for pyrexia of unknown origin was 28 to 400 days with the mean of 105 days. People living in villages were 76, where as people from urban area were 34.

Etiological profile in PUO patients:

TABLE 2 Etiological Profile of the patients

Etiology	Number of Patients
Infections:- M Tuberculosis Kala – azar Malaria	56 (51%) 40 6 10
Neoplasm: Chronic lymphoid leukemia Acute leukemia Non Hodgkin lymphoma Uncharacterized Malignancy	36 (33%) 9 20 2 5
Undiagnosed	18 (16%)

Final diagnosis could be reached in 92 (84%) patients Infectious etiology was present in 56 (51%) patients. Malignancy was found in 36(33%) of patients.

Seventy two patients had pallor which was the commonest physical finding followed by hepatosplenomegaly (34 patients) and lymphadenopathy (22 patients). Routine laboratory test abnormalities were common but mostly non-specific. Anemia was present in 90 patients, 55 of whom had moderate to severe anemia (<8gm% in women, <9gm% in men). Twenty two patients had leukocytosis and thirty five had leukopenia.

DISCUSSION :-

There was large number of causes for PUO, hence comparison of patients is difficult. Infectious diseases are important etiological agents for PUO in India [10]. In our study tuberculosis was commonest cause of PUO. same as other developing region of world. [11,12].

Haematological malignancies are commonest neoplastic causes of PUO [13,14]. Same findings in our study Histopathological examination

of bone marrow biopsy had a higher yield in our patients in contrast to other studies which report the yield to range from 2% to 18%.[15,16,17]

Bone marrow aspiration and trephine biopsy is a painful procedure but it saves a painful procedure but it saves life of many patients. [18,19].

CONCLUSION :-

Bone marrow aspiration and biopsy are important diagnostic tools for diagnosis of Pyrexia of unknown origin and also provide clues for the further evaluation by providing important morphological details. Various diseases like malignancies and infections modify the cellular and interstitial component of marrow which can be studied in bone marrow aspiration and biopsy. Most common etiology for PUO in this region is infections.

REFERENCES:-

1. Cherry D.K. Woodwell DA National ambulatory medical care survey, 2000 sumary Adv. Data 2002. 328 1-32.
2. Petersdorf RG. Beeson PB, Fever of unexplained origin, report of 100 cases. Medicine 1961, 40: 1-30.
3. Laing RBS, Fever and Pyrexia of Unknown origin. Medicine 2001, 29: 24-6.
4. Avnow PM, Flaherxy JP. Fever of unknown origin. The Lancet 1997. 350-1575-80.
5. Hot Aschmulewitz Lviard JP Lortholary 0 fever of Unknown origin in HIV/ AIDS Patients Infect Disclin North Am 2007, 21 (4) 1013 – 1032.
6. Benita N Nunez Ade Gorgolays M et al Bone marrow biopsy in the diagnosis of fever of unknown origin in Patients with acquired immunodeficiency Syndrome Arch Intern Med 1997; 157 (14) 1577 – 1580.
7. Esposite AL, Gleckman RA. A diagnostic Approach to the Adult with Fever of Unknown origin. Arch Intern Med 1979; 139 – 575 – 9.
8. Roth AR Basello GM Approach to the Adult patient with fever of unknown origin. Am Fam Physician 2003, 68: 2223 – 8.
9. Kuperwasser LI, Darius H, Muller AM, Martine, Mohar KS, Erbel R et al, Diagnosis of culture negative endocarditis, the role of the Duke criteria and the impact of transoesophageal echocardiography AM Heart J 2001, 142 : 146 – 52.
10. Jung A Singh MM. Jajoo U. Unexplained fever – analysis of 233 cases in a referral hospital Indian J Med. Sci. 1999, 53, 535 – 44 (Pub Med.).
11. Colpan A Onguru P, Erbay A Akinei E, Cevik MA, Eren SS. et al fever of unknown origin. Analysis of 71 consecutive cases AM. 2007, 334: 92 – 6 [Pub Med.
12. Chin C, Chen VS, Lee SS Wann SR, Lin HH, Lin WR, et al. Fever of unknown origin in Taiwan, Infection, 2006, 34:75 – 80 (Pub Med.)
13. Vanderschueren S, knockaert D, Adriaenssens T et al. From – Pro – longed febrile illness to fever of unknown origin; the challenge continues, Arch Intern Med 2003; 163; 1033 – 41.
14. Saltoglue N. Tasova Y, Midikli D, Fever of unknwon origin in Turkey evaluation of 87 cases during a nine year period of study J Infect 2004: 48: 81-5.
15. Singh G. The study of prolonged fevers. JAPI 2000; 48: 454 – 55.
16. Kleijn EMHAD, Lier HJJV, Group TNFS, FUO Diagnostic procedures in a prospective multicenter study of 167 patients, Medicine (Baltimore) 1997; 76: 401 – 414.
17. Ahmed S. Siddiqui A. Mehrotra B. Diagnostic yield of bone marrow examination in FUO. The American Journal of Medicine 2003; 115: 591.
18. Baruch SO, Cannani J, Braunstein R, Perry C, Ben Ezraj, Polliack A, et al. Predictive parameters for a diagnostic bone marrow biopsy specimen in the workup of fever of unknown origin Mayo Clin Proc 2012; 87 (2): 136 – 42.
19. Hot A Jaissani, Girard C, French M, Durand DV, Rousset H, et al. Vield of bone marrow examination in diagnosing the source of fever of Unknown origin. Arch Intern Med 2009. Nov 23; 169 (21); 2018 – 23.