

To study the etiology of classic FUO

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Abstract

Background: To study the etiology of classic FUO

Methods: This was a cross sectional study of one year duration and was performed in the Department of Medicine in I.G.M.C. Shimla. Patients above 18 years of age were included in the study.

Results: Infections were responsible for 80% cases of FUO in our study. These infections included tuberculosis (29%), enteric fever (17.5%), intra-abdominal abscesses (8.8%), chloroquine responsive fever (4.4%), brucellosis (7%), leishmaniasis (4.4%), and UTI (2.2%) of the cases. NIID and neoplasms were responsible for only 4.4% and 2.2% of cases FUO in our study, while 13.2% of the cases remained undiagnosed.

Conclusion: Most common cause of FUO was infections.

Keywords: Infection, FUO, PDCs

Introduction

In 1961, Petersdorf and Beeson formally proposed the definition of classic fever of unknown origin (FUO) by observing and summarizing a series of patients with unexplained fever as follows: a temperature $> 38.3^{\circ}\text{C}$ on several occasions over a period of more than 3 weeks without a diagnosis despite 1 week of inpatient

investigation. At present, the aetiological classification of FUO includes infectious diseases, non-infectious inflammatory diseases, tumour diseases, other diseases and unknown diagnoses. Despite advances in medicine, the proportion of patients discharged with undiagnosed FUO after systematic examination has not decreased. Currently, the cause of febrile illness is not identified in approximately 9–51% of patients.¹⁻² The reason may be that with the improvements in the quality of medical care and diagnostic tools, such as the popularization of advanced imaging technology, improvement in pathogen culture technology, newly developed serological detection projects, and application of polymerase chain reaction (PCR) technology, diagnosis rates of common diseases are improved. However, cases that meet the classic definition of FUO are becoming increasingly complex. Only a few studies to date have reported the outcome of patients who are discharged with undiagnosed FUO³⁻⁵

Material and methods

Design of the study

This was a cross sectional study of one year duration and was performed in the Department of Medicine in I.G.M.C. Shimla.

Inclusion Criteria

Only patients above 18 years of age were included in the study.

Only those patients who fulfill the Durack & Street criteria of classic FUO were included in the study i.e.

- Temperature of > 38.3°C (101°F) on several occasions,
- A duration of fever of > 3 weeks and,
- Failure to reach the diagnoses despite 3 days of hospital.

Exclusion Criteria: Patient with neutropenia (absolute neutrophil count<500/ml) patient developing fever 48 hours after hospital admission and human immunodeficiency virus (HIV) positive patients were excluded from study.

Method of study: After initial history taking and thorough physical examination, the patients were subjected to routine investigations. The history taking

Table 1: causes of classic fever of unknownorigin

Diagnostic Category	Number of cases (%)
Infections	36(80%)
NIID	2(4.4%)
Malignancy	1(2.2%)
Undiagnosed	6(13.2%)

Table 2: sub classification of infections

Category	Male	Female	Total	Frequency(%)
Pulmonary Tuberculosis	1	1	2	4.4%
Extrapulmonary Tuberculosis	5	2	7	15.4%
Empirical ATT	4	0	4	8.8%
Enteric	4	4	8	17.6%
Abscess	3	1	4	8.8%
Chloroquine responsive fever	2	0	2	4.4%
Lieshmaniasis	1	1	2	4.4%
Brucellosis	3	0	3	6.6%
UTI	1	0	1	2.2%

and investigations are discussed in detail in the proforma.

Investigations: Haematological profile-Hb, TLC, DLC, ESR, Platlet count by sm-9 haematological analyser.

Biochemical Profile: FBS/RBS, LFT, RFT, Electrolytes was done by KONE LAB 30 fully automatic analyser.

Results : Infections were responsible for 80% cases of FUO in our study. These infections included tuberculosis (29%), enteric fever (17.5%), intra-abdominal abscesses (8.8%), chloroquine responsive fever (4.4%), brucellosis (7%), lieshmaniasis (4.4%), and UTI (2.2%) of the cases. NIID and neoplasms were were responsible for only 4.4% and 2.2% of cases FUO in our study, while 13.2% of the cases remained undiagnosed.

Therapeutic Trial (Inj. Meropenem, Inj. Metrogyl, Tab Azithromycin)	2	1	3	6.6%
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Discussion

UTI was the cause of FUO in only one case in our study. Bleeker Rover et al⁷ reported 1.3% cases of UTI, Zamir et al⁶ reported 4% cases, Bandyopadhyay et al⁷ reported 3.6% cases, and Kejriwal et al⁸ reported 4% cases of UTI. Thus our observation was similar to the above mentioned studies.

NIID and neoplasms were responsible for only 4.5% and 2.2% of cases FUO in our study. In the western studies, Petersdorf et al² reported 18.7% cases of NIID and 20.9% cases of neoplasm, Larson et al⁹ reported 14.8% and 37.5%, Barbado et al¹⁰ reported 19.2% and 25%, De Kleijn et al¹¹ reported 33% and 18.3% cases of NIID and neoplasms respectively.

In India, infectious disease still remains the most important cause of fever. Thus the initial investigations should always include tests for ruling out or confirming diagnosis of infectious disease. Signs and symptoms can guide us to the final diagnosis in majority of the cases.

Conclusion

Most common cause of FUO was infections.

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