AETIOLOGY OF FEVERS IN THE FIRST ONE THOUSAND PATIENTS ADMITTED TO BENHA FEVER HOSPITAL DURING 1992

Thesis
Submitted in partial fulfillment for the Master Degree in internal medicine

By

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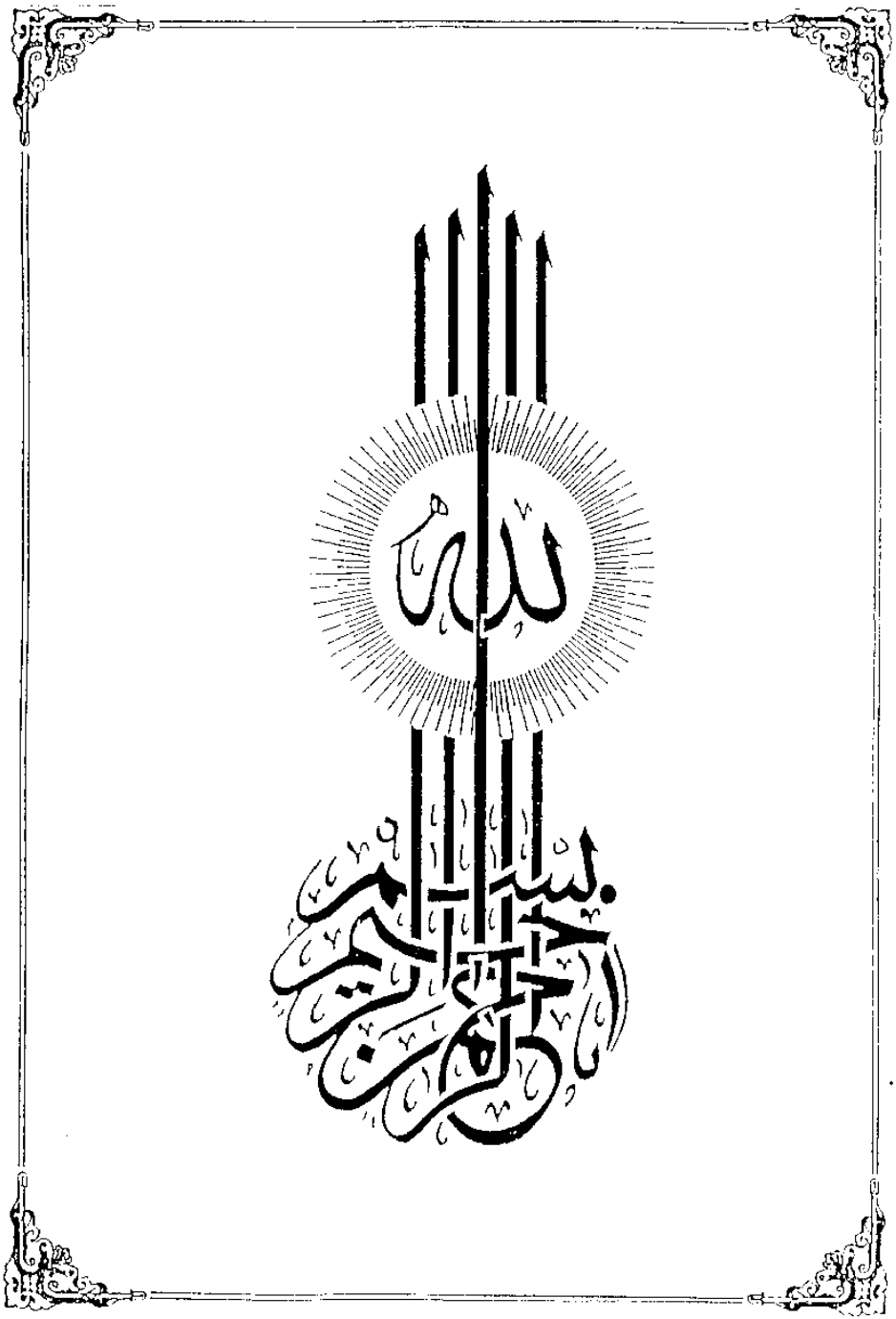
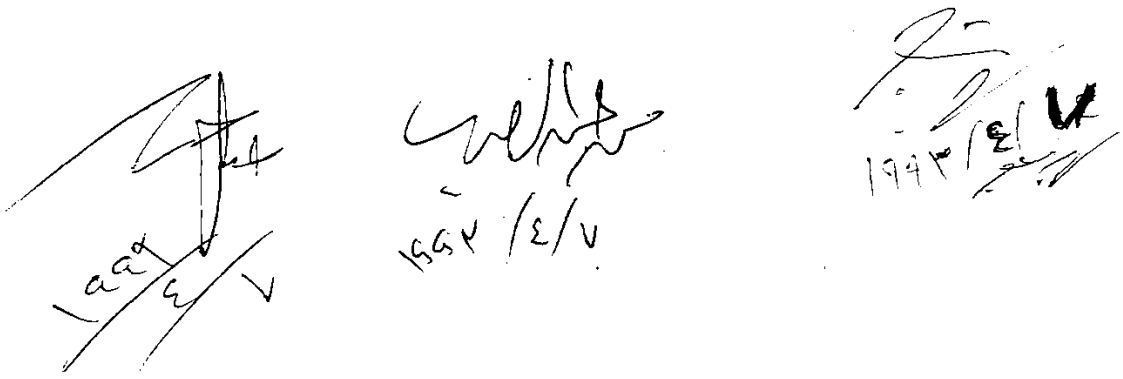
بسم الله الرحمن الرحيم

**قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم **

[البقرة : آية ٣٢]



TO MY MOTHER, MY WIFE
AND
MY SON OMAR



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INTRODUCTION AND AIM OF THE WORK

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Feverish illnesses are common in the community and the average practitioner will see several patients with pyrexia each day.

The causes are many. They may be infections,collagen diseases, central nervous system diseases, malignant neoplastic diseases, haematologic diseases, cardivascular diseases, gastrointestinal diseases, endocrinal diseases, diseases due to physical agents, disease due to chemical agents,disorders of fluid balance,psychogenic fever,factitious fevers and other miscellaneous conditions **(Chatton, 1984)**. In cases of fever, more than any other branch of medicine,the pattern of illness is affected to a great extent by personal social,economic and other environmental factors, also, it reflects the efficacy of health service and hygienic measures adopted by the community. This is true as regards the bulk of cases caused by infections in relation to other aetiologies.

To reach to a definite diagnosis in every case of fever is a difficult scientific task,it is a real clinical and investigative challenge.

So as the diagnosis of different types of fevers reflects the status of the medical and health system, it also expresses the scientific profile of medical and paramedical personelle.

AIM OF THE WORK :

The aim of this work was to identify the different aetiologies of fever in patients admitted in Benha Fever Hospital and the impact of this on the different aspects mentioned.

EPIDEMIOLOGY OF INFECTIOUS DISEASES

Epidemiology (epi-upon,demos-people, logy-science) is the study of the frequency and distribution of disease in population and of these factors determining or associated with disease occurrence. Such studies have made significant contributions to the understanding and control of many conditions, both infectious and non infectious.

Infectious diseases are those diseases caused by pathogenic micro-organisms which can be transmitted from the source of infection to the susceptible host. Though largely controlled at present in the developed countries, yet they still form an important public health problem in the under-developed communities **(Kalil, 1981).**

Infection is maintained in the community by the infectious process which is a chain of 3 links :

1- Source or reservoir of infection which harbour, the organism :
   - Patients or carriars.
   - Animal responsible for spread of zoonoses.
2- Modes of transmission of the causative organism.
3- A susceptible population.

The sick human is the most important source of infection and in some, in which no carrier state has been observed and which are common to man only (measles, smallpox, chickenpox,

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German measles, Typhus ect.), he is the sole source. The sick person usually becomes infective from the onset of the disease and in some infections (diphteria, typhoid fever,ect) even in the last days of the incubation period, and remains contagous during the whole period of discharge of virulent microbes.

In many diseases (diphtheria, scarlet fever,cerebrospinal meningitis, poliomyelitis, typhoid fever, dysentery, cholera viral hepatitis, leishmaniasis and malaria) not only sick persons spread the infection but also carriers (Nosov, 1971).

Three types of carriers are distinguished :

1- A carrier state in the incubation period is observed in fact in all infections, but plays an epidemiological role only in some of them (Diphtheria, epidemic cerebrospinal meningitis, typhoid fever, cholera, ect.) The role of such carriers is not apparently very great.

2- Convalescent carriers, who,like patients,usually discharge great quantities of virulent strains of microbes, are much more important.Most convalescents cease to be carriers one to three weeks after recovery but in quite rare cases the causative agents may persist for one to three months and after some diseases (typhoid and paratyphoid fever, brucellosis) the carrier state may become chronic. Thyphoid carriers who harbored bacilli for decades have been reported. Prolonged carrier state is usually associated

with chronic inflammation e.g. (e.g. cholangitis,cholecystitis and inflammation of the urinary tracts). The epidemiological significance of convalescent carriers is very great in typhoid, dysentery consillitis, rhinitis, diphtheria and scarlate fever.

3- Healthy carriers of epidemic meningitis, poliomyelitis diphtheria, scarlet fever and intestinal infections are frequently encountered. Healthy carriers, discharge far fewer causative agents than patients and convalescents and mainly avirulent strains, but owing to the fact that they are numerous and because of impossibility for detecting and isolating them all, they are epidemiologically very important. Healthy carriers are responsible for the majority of epidemic meningitis and poliomyelitis cases.

The history of epidemics points to the immense significance in the control of infectious diseases of proper hygiene and sanitation in populated localities **(Nosov, 1971)**. In combating intestinal infections they have proved to be the most radical measures. The most important factors are housing conditions, the state of communal services, overcrowding and poor sanitary conditions. Infectious diseases spread like wildfire when these environmental conditions are not favorable.

The principal role in the epidemiology of infectious diseases is played by the environment **(social and natural factors)**.

I) The social structure of society is particularly important since it largely determines the standard of hygiene and sanitation in the society, home, and general living conditions of the working classes,namely : a) The sanitary condition of built-up populated areas(water supply,sewage, street cleansing, refuse collection, provision of parks and open spaces ect). b) Housing conditions and the state of communal facilities.c) The level of development of public health and sanitary services and provision of medical care.

II) Natural factors (e.g. climate, season) remain significant in the development and course of epidemics. The incidence of certain infections definitely depends on climate.

Seasonal character of a number of infectious diseases is well known. A sharp rise in the epidemic curve is noted with intestinal infections during the summer and autumn months, with aeriol-droplet infections during the cold autumn and winter period, with brucellosis in spring and with malaria during summer months **(Nosov, 1971)**.

We are gowing to review in short the most prevalente infectious diseases in Egypt namely meningitis, enterica, brucellosis and tetanus.

MENINGITIS

Definition :

- Meningitis is inflammation of the meninges.
- Pachymeningitis is inflammation of the dura.
- Leptomeningitis is an inflammation of the arachnoid, the piamater and the intervening cerebrospinal fluid.The inflammatory process extends throughout the subarchnoid space about the brain and spinal card and regularly involves the ventricles **(Saif El-Din and Abdel Wahab, 1991).** Pyogenic meningitis is usually an acute infection with bacteria that evoke a polymorphonuclear response in cerebrospinal fluid **(Swartz, 1988).** The infecting bacteria usually reach the meninges by blood stream **(Saif El-Din and Abdel Wahab, 1991).** Occasionally, however, infection extends to the meninges directly from other intracranial foci or it results from inoculation of extradural bacteria **(Overturf and Haeprich, 1983).**

Etiology : Table (I)

Many species of bacteria can cause acute bacterial meningitis, but surveys undertaken in various parts of the world have shown that the three organisms which are : streptococcus pneumoniae, haemophilus influnza and Neisseria meningitidis account for approximately three-fourth of all cases **(Greenwood, 1984).**