

Ceftriaxone in The Treatment of Multiresistant Typhoid Fever in Children

Thesis

*Submitted For the Partial Fulfilment of
The Master Degree*

In

Pediatrics

By

Mohye El-Din Mohamed Sayed Soliman
(M.B.,B.Ch.)

Supervisors

Ass. Prof. Dr. Nancy Abdel-Aziz Soliman

Assist. Prof. of Pediatrics
Faculty of Medicine
Ain shams University

Dr. Mohamed Nasr El-Din El-Barbary

Lecturer of Pediatrics
Faculty of Medicine
Ain Shams University

Faculty of Medicine - Ain Shams University

1995

بسم الله الرحمن الرحيم

(وقل رب زدني علماً)

صدق الله العظيم

سورة طه آيه رقم (١١٤)



Acknowledgement

First of all I would like to thank GOD,

I wish to express my most sincere and heartfelt gratitude to **Dr. Nancy Abdel Aziz Soliman**, Assist. Prof. of Pediatrics, Faculty of Medicine, Ain Shams University, not only because this work would have never seen the light without her generous support and guidance, but also because she injected in myself how to be serious, systematic and scientific.

I owe my sincere thanks and appreciation to **Dr. Mohamed Nasr El-Din El-Barbary**, Lecturer of Pediatrics, Faculty of Medicine, Ain Shams University, for his unfailing support and continuous encouragement throughout this study.

Lastly I would like to thank my colleagues at the Abbassia fever hospital who participated or helped me in one way or the other to complete this work.

List of Abbreviation

ASOT	Antistreptolysin O titre
CIE	Counter immuno-electrophoresis
CMI	Cell mediated immunity
CMIR	Cell mediated immune response
ELISA	Enzyme linked immuno-sorbent assay
ESR	Erythrocyte sedimentaiton rate
H antigen	Flagellar antigen
Hb	Haemoglobin
O antigen	Somatic antigen
RBCs	Red Blood Cells
SD	Standard deviation
SMZ	Sulfamethoxazole
S. typhi	Salmonella typhi
TLC	Total leucocytic count
TMP	Trimethoprim
Vi	Surface antigen

List of Tables

Table No.		Page
Table (1)	Frequency of the presenting symptoms in 50 children with typhoid fever	72
Table (2)	Frequency of the presenting signs in 50 children with typhoid fever	73
Table (3)	Complete blood picture in 50 children with typhoid fever	75
Table (4)	Results of total leucocytic count in 50 children with typhoid fever.	76
Table (5)	Serotypes of salmonella isolated from 50 children with typhoid fever	78
Table (6)	Results of Widal test in 50 children with typhoid fever	80
Table (7)	Evaluation of cultures and serology in the diagnosis of 50 children with typhoid fever	82
Table (8)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding Hb (gm%).	84

Table (9)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding RBCs count.	85
Table (10)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding E.S.R.	86
Table (11)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding total leucocytic count (T.L.C).	87
Table (12)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding Basophils (%).	88
Table (13)	Comparison between patients with typhoid fever before and after treatment by ceftriaxone regarding eosinophil %.	89
Table (14)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding band % and segmented %.	90

Table (15)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding lymphocyte %.	91
Table (16)	Comparison between patients with typhoid fever before and after treatment by Ceftriaxone regarding monocytes %.	92
Table (17)	Comparison between stool culture before and after treatment	93
Table (18)	Comparison between urine culture before and after treatment	94
Table (19)	Clinical efficacy of Ceftriaxone as regards subsidence of body temperature to normal.	95

List of Figures

Fig. No.		Page
Fig. (1)	Clinical presentation of the studied cases by frequency	74
Fig. (2)	Results of total leucocytic count in typhoid patients.	77
Fig. (3)	Serotypes of salmonella isolated from 50 children with typhoid fever.	79
Fig. (4)	Results of Widal test in 50 children with typhoid fever.	81
Fig. (5)	Evaluation of cultures and serology in the diagnosis of 50 children with typhoid fever.	83
Fig. (6)	Clinical efficacy of ceftriaxone as regards subsidence of body temperature to normal	96

Contents

Introduction and aim of the Work	1
Review of Literature	3
Subjects and Methods	64
Results	72
Discussion	97
Summary and Conclusions	105
Recommendations	107
References	108
Arabic Summary	

iNTRODUCTION & AiM OF THE wORK

Introduction :

Enteric fever is endemosporadic in Egypt. The reported number of enteric fever cases is below the real one as many cases are treated in private practice without notification of the health authorities. (**Abdel Wahab and Mahmoud, 1988**).

Salmonella enteric fever is a major cause of morbidity in developing countries. Chloramphenicol is generally effective, but relapse rate and resistance of the organism to this antibiotic are sufficient to continue evaluation of new antibacterial agents (**Girgis et al., 1990**).

The emergence of salmonella typhi and salmonella paratyphi resistant to chloramphenicol, trimethoprim-sulfamethoxazol and ampicillin has warranted the search for evaluation of new chemotherapeutic agents that could be used safely and effectively in the treatment of such infections (**Rowe et al., 1990**).

Ceftriaxone is a broad spectrum antibacterial agent with a long elimination half life (about 7 hours in children) making it suitable for a once daily dosage regimen. It is given intramuscularly once daily for 5 days (**Moosa and Rubidge, 1989**).

Aim of the Work :

The aim of this work is to study the efficacy of Ceftriaxone in the treatment of multiresistant typhoid fever in children.

REVIEW OF LITERATURE

Typhoid Fever

Typhoid fever is an acute systemic illness caused by infection with salmonella typhi. It is characterized by prolonged fever, sustained bacteremia without endothelial or endocardial involvement and bacterial invasion or multiplication within the mononuclear phagocytic cells of the liver, spleen, lymph nodes and Peyer's patches. Paratyphoid fever is pathologically and clinically similar to typhoid fever but is generally a milder illness that is caused by many species of salmonella. Enteric fever refers to either typhoid or paratyphoid fever (*Hoffman, 1991*).

Epidemiology of Enteric Fever

I- Prevalence and Incidence :

The association of poverty with inadequate sanitary facilities and questionable water supplies enhances the opportunity for the population in developing countries to acquire enteric infections (*Evans and Feldman, 1984*).

It has been estimated that the world wide incidence of typhoid fever is approximately 12.5 million cases per year
