SUMMARY AND CONCLUSION

This work was conducted to study a group of febrile children with temperatures of 38.5°C or greater and diagnosed clinically as acute otitis media to determine the occurence of associated bacteremia and the bacteriological causes associated with this bacteremia.

This work was done from September 1992 to January 1993 where blood samples and nasopharyngeal swabs were taken, 3-8 Cm of blood were taken from febrile children attending Ear, Nose and Throat outpatient clinic of El-Ahrar Zagazig General Hospital. The blood samples were preserved on diphasic media and the nasopharyngeal swabs were cultured on chocolate agar , and blood agar Diphasic media were incubated at 37°C for 24 hours and chocolate agar media were incubated at 37°C in candel jar for 24 hours and also blood agar media were incubated at 37°C for 24 hours. Subcultures from diphasic media were done on chocolate agar media and incubated at 37'C at Co2 candel jar for another 24 hours and also on blood agar. The resulting growth colonies were identified by Gram's stain and biochemical reactions to know the type of the isolated strain which were tested for their antibiogram using antibiotics discs and they were tested for the production of B-lactamases and acetyltransferase enzyme. The isolated strains also were tested ftr their minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) for both ampicillin and

chloramphenicol using serial dilution method. Their kinetic killing curve for ampicillin and chloramphenicol was also done for each antibiotic singly then both are combined together to identify synergistic or antagonistic effect.

The results of this study were as follows :

1- Three types of organisms were isolated from both blood and nasopharyngeal swabs and they were S. pneumoniae, B. catarrhalis and S. aureus.

2- The number and percentage of isolated organisms from nasopharyngeal swabs were (42) S. pneumoniae (63) B. ratarrhalis and (66) S. aureus in percentage of 56%. 84% and 88% respectively. While the number and percentage of organisms isolated from total blood samples taken were (3) S. pneumoniae, (2) B. catarrhalis and (8) S. aureus in a percentage of 4%, 2.7% and 10.7% respectively.

3- The positive blood samples from which organisms were isolated were (13) from total blood samples taken and this represents a percentage of 17.3% which represent the incidence of bacteremia associated with otitis media in this study.

4- The number of isolated organism from blood samples which were resistant to chloramphenicol were (10) in a percentage of 76.9% from all isolated organisms from the blood.

5- The antibiotic sensitivity testing for isolated organisms from blood samples to the selected antibiotics illustrated that all isolated organisms of all types were resistant to sulphanomides. All isolated B. catarrhalis and S. aureus were sensitive to rifampicin while isolated S. pneumoniae were resistant to this antibiotic.

6- For the production of B-lactamase all isolated S. pneumoniae were non producers and 50% of isolated B-catarrhalis are producers and 62.5% of isolated S. aureus were B-lactamase producers.

7- The minimum inhibitory concentrations (MIC) and minimum bactericidal concentrations (MBC) of the streptococcal pneumoniae isolates ranges from 0.78 ug/ml to 6.25 ug/ml for ampicillin and ranges from 0.78 ug/ml to 50 ug/ml for chloramphenicol.

8- The MIC for B-catarrhalis isolates ranges from 0.195 mg/ml to 1.55 ug/ml for ampicillin and was 25 ugcml for chloramphenicol and the MBC for ampicillin ranged from 0.39 ug/ml to 6.25 ug/ml and rangeo from 50 to 100 ug/ml for chloramphenicol.

9- The MIC of isolated S. aureus for ampicillin ranges from 0.39 ug/ml to 25 ug/ml and was the same for chloramphenicol and the MBC ranged from 0.78 ug/ml to 50 ug/ml for both antibiotics.

10-The kinetic kill curve of ampicillin and chloramphenicol

each by itself or both are combined was done for all types of isolated strains by using 50 ug/ml ampicillin and 100 ug/ml of chloramphenicol and the results were identified by plotting time against bacterial counts.

From this work we conclude that :

S.aureus organisms were the most common type of organisms causing bacteremia in cases with otitis media.

2- Chloramphenicol resistant strains represents a large percentage. of all types of organisms causing bacteremia with otitis media about 75%.

3- All strains were resistant to sulphonamides.

4- The B-lactamase producing strains represent a percentage of 46.1% of all isolated strains.

5- The kinetic kill curve of ampicillin and chloramphenicol represents an autonomous or indifferent effect where the results of the two drugs were equal to the result with the most effective drug by itself which was ampicillin in this study.

6- Children with otitis media are at risk of having bacteremia and its potential complications.

We recommended for the following :

1- Because of the prevalence of ampicillin and chloramphenicol resistance both drugs should not be used as a single drug therapy of bacteremia unless it has been established that the organism is an antibiotic

susceptible to avoid suppurative complications.

2- For most febrile children with otitis media it is benefit of drawing blood culture for the prevention of life threatening focal infections.

3- Further studies on the different serotypes of the same organism which may be b-lactamase producer to choose the most effective antibiotics.

4- Further studies to identify the causes of antibiotic resistance.

5- Further studies on different antibiotic combination to give more synergistic effect.