INTRODUCTION

Blood stream infections could range from self-limiting infections to life threatening sepsis that require rapid and aggressive antimicrobial treatment. These blood stream infections when of bacterial origin and in association with systemic inflammatory response (SIRS) are referred to as bacterial sepsis. SIRS is said to be present when there is fever in conjunction with any two of the following: tachycardia, tachypnoea and an abnormal leucocyte count. Blood stream infections, presenting as sepsis are an important cause of morbidities and mortalities. In fact, a study had noted that one of the more alarming recent trends in infectious diseases has been the increasing frequency of antimicrobial resistance among microbial pathogens causing nosocomial and community acquired infections. This has led to the calls that effort at continuous surveillance of antibiotic resistance in blood pathogens be put in place. This will help in prescribing and infection control policy and guide the development of new antibiotics. This is essential for the attainment of the best clinical practice that is a by-product of evidence based medicine. This paper presents a review of the cases seen in a Children Specialist Hospital in southeast Nigeria and aims to highlight the sensitivity pattern of the most prevalent bacterial pathogen in childhood bacterial sepsis in the environment.

METHODS

Children presenting with presumed bacterial sepsis from Jun 2005 to May 2007 inclusive in a Children's Specialist Hospital in southeast Nigeria over a 2 year period with fever and other features of systemic inflammatory response syndrome (SIRS) thought to be due to bacterial infection (but without focal point of infection) had their blood cultures done. A review of their case notes and an analysis of their blood culture and antibiogram sensitivity results was done.

RESULTS:

Fourteen cases fitted the criteria and were analysed. *Staphylococcus aureus* was the commonest organism and of the profiled antibiogram the sensitivity pattern showed that ciproxin, gentamycin, chloramphenicol and erythromycin were the best.

CONCLUSION:

*Staphylococcus aureus* is still a major cause of childhood bacterial sepsis. Gentamycin and erythromycin are safe and useful antibiotics in their treatment and are recommended.

KEY WORDS: childhood sepsis, bacteria, sensitivity.

(accepted 12 May 2008)
include:
1. age above one month
2. presence of fever of above 37.5°C
3. presence of any two of the following: tachycardia or tachypnoea for age (above 90th centile for age) or neutrophilic leucocytosis.
4. positive blood culture result.
The exclusion criterion is presence of a focal point of bacterial infection.
Their sexes, ages, organism cultured and antibiogram sensitivity pattern were recorded and analysed.

RESULTS
Thirty eight cases had blood cultures done within the period but only 14 met the criteria and were reviewed. There were 8 males and 6 females with a male to female ratio of 1.3:1. The culture results and antibiotic sensitivity pattern are as shown in Tables 1a and 1b for females and males respectively. From these tables, the cultured organisms were sensitive to gentamicin, Erythromycin, ciproxin, chloramphenicol and streptomycin for both sexes but resistant to nitrofurantoin for both sexes. Table 2 shows the number of times each drug was used for sensitivity testing and their recorded degree of pathogen sensitivity. The cultured organisms were many times more sensitive to gentamicin erythromycin, ciproxin, chloramphenicol and streptomycin. Specifically, the degree of sensitivity was more to gentamicin, ciproxin, chloramphenicol and erythromycin in that order.

Table 1: Culture Results and Antibiotic Sensitivity in Childhood Sepsis.

### Table 1a: Females

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Gent</th>
<th>Linc</th>
<th>Ery</th>
<th>Cipr</th>
<th>Chlor</th>
<th>Str</th>
<th>Rif</th>
<th>Ampclox</th>
<th>Nitrfl</th>
<th>Flox</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Staph au</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>-</td>
<td>S</td>
<td>R</td>
<td>R</td>
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<td>S</td>
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<tr>
<td>9</td>
<td>Staph au</td>
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<td>S</td>
<td>-</td>
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<td>R</td>
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<td>R</td>
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<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>-</td>
<td>-</td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>60</td>
<td>Strep pn</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>-</td>
<td>S</td>
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<td>S</td>
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### Table 1b Males

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<th>Linc</th>
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<th>Cipr</th>
<th>Chlor</th>
<th>Str</th>
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</table>

F = Female  
M = Male  
R = Resistance  
S = Sensitive

**Staph au** = Staphylococcus aureus = 85.7%  
**Strep pn** = Streptococcus Pneumonia = 14.3%

GENT = gentamicin  
LINC = lincocin  
ERY = erythromycin  
CIPR = ciproxin  
CHLOR = chloramphenicol  
STR = streptomycin  
RIF = rifampicin  
AMPCLOX = ampicloxacillin  
NITRF = nitrofurantoin  
FLOX = flucoxacillin
same finding by some other studies. Additionally, it may also be plausible that in our environment, we have the Canadian strain of *Staphylococcus aureus* which was found in a sentinel study to be more sensitive to these antibiotics than as would be expected, hence our results. A word of caution however is that these are in vitro results. There may be alterations of sensitivity, inhibitory or potentiation, which could result from in vivo use of these drugs. It is therefore being recommended that, in clinical conditions in this environment where bacterial organism is suspected as the cause of a presumed sepsis, erythromycin or gentamycin or a combination of both could be used in the initial treatment of such patients while awaiting the blood culture results. Erythromycin is recommended over ciproxin and chloramphenicol because it has the least side and or idiosyncratic effect from the other two drugs.A child with bacterial sepsis is at risk for progression of the condition to an ultimate death. Timely and definitive medication of such a child would be the expectation of all especially if based on evidence such as this.

**ACKNOWLEDGEMENT**

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**REFERENCES**


