THE GLOBAL POINT PREVALENCE SURVEY (GLOBAL-PPS) OF ANTIMICROBIAL CONSUMPTION: RESULTS OF ANTIMICROBIAL PRESCRIBING AT THE UNIVERSITY COLLEGE HOSPITAL (UCH), IBADAN.

Adeola Fowotade¹, Ann Versporten², Temitayo O. Fasuyi¹, Osagie E. Aigbovo¹, Herman Goossens², Aderemi O. Kehinde¹.

1. Department of Medical Microbiology and Parasitology, University College Hospital, Ibadan, Nigeria.
2. Laboratory of Medical Microbiology, Vaccine and Infectious Diseases Institute, University of Antwerp, Antwerp, Belgium.
DISCLOSURE SLIDE

- We declare no conflict of interest
The misuse and overuse of antibiotics are widespread, not only in poor and developing countries, but also worldwide.

The inappropriate prescription and use of antibiotics has led to an upsurge in the prevalence of antimicrobial resistance, thus constituting a threat to the health of man globally\textsuperscript{1,2}

Development of antimicrobial resistance can be curbed by the adoption of antimicrobial stewardship which promotes surveillance of prescribing practices and antimicrobial use.\textsuperscript{3}
BACKGROUND

- There is inadequate information on antimicrobial prescription practices in many sub-Saharan African countries including Nigeria.\(^4\)
- Hence we evaluated the appropriateness of antimicrobial use through the Global-Prevalence Survey method designed by the University of Antwerp, Belgium.
METHODS

- The University College Hospital is a 900-bedded tertiary health facility located in Nigeria.
- The Point Prevalence Survey (PPS) was conducted in December, 2017 with Ethical approval from the joint UCH/UI Ethics committee.
- The survey included all in-patients receiving an antimicrobial on the day of PPS.
- Blinded data collected included details on the antimicrobial agents, reasons for treatment as well as a set of quality indicators.
- Denominators included the total number of in-patients per ward.
- A web-based application was used for data-entry, validation and reporting as designed by the University of Antwerp [www.global-pps.be].
RESULTS

Figure 1: Percentage of patients on antimicrobial therapy

- 40% No Antimicrobial Therapy
- 60% Antimicrobial Therapy
Figure 2: Prevalence of antimicrobial prescription by wards

[Graph showing the prevalence of antimicrobial prescription by wards, with different wards on the x-axis and percentage on the y-axis.]
RESULTS

Figure 3: Classes of antimicrobials prescribed

- Third generation cephalosporins: 24%
- Penicillins + Enzyme Inhibitors: 17%
- Fluoroquinolones: 17%
- Metronidazole: 14%
- Aminogycosides: 14%
- Second generation cephalosporins: 15%
- Others: 8%
## RESULTS

### Table 1: Indications for antibiotic prescription

<table>
<thead>
<tr>
<th>S/No</th>
<th>INDICATION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>THERAPEUTIC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>CAI</td>
<td>128</td>
<td>67.7</td>
</tr>
<tr>
<td></td>
<td>HAI</td>
<td>61</td>
<td>32.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>189</td>
<td>42.3</td>
</tr>
<tr>
<td>B</td>
<td><strong>PROPHYLAXIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medical</td>
<td>75</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>Surgical</td>
<td>176</td>
<td>70.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>251</td>
<td>56.1</td>
</tr>
<tr>
<td>C</td>
<td><strong>INDICATION NOT SPECIFIED</strong></td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td><strong>GRAND TOTAL</strong></td>
<td>447</td>
<td>100</td>
</tr>
</tbody>
</table>
# RESULTS

## Table 2: Quality indicators of antimicrobial prescription

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>NUMBER</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason in notes</td>
<td>413</td>
<td>92.3</td>
</tr>
<tr>
<td>Stop/review date</td>
<td>97</td>
<td>36</td>
</tr>
<tr>
<td>Targeted therapy</td>
<td>17</td>
<td>3.8</td>
</tr>
<tr>
<td>Biomarkers</td>
<td>5</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Our study showed a high antimicrobial prescription rate of 60%.

This is similar to reports from another hospital based study from Nigeria which reported a prevalence of 69.7%. However, it is higher than the European GPPS average of 34.7%.

Similar to reports by Oduyebo et al., Talaat et al. and Versporten et al., third generation cephalosporins, mainly ceftriaxone was the most prescribed antibiotic.

There is a need for antimicrobial susceptibility profiling of ceftriaxone against common bacteria pathogens to rule out AMR.
DISCUSSION

- Surgical prophylaxis accounted for a higher proportion of antimicrobial prescription with majority (98.7%) of the prophylaxis being administered for more than 24 hours.

- Reports by Oduyebo et al. in Nigeria and a study of 18 hospitals in Egypt by Talaat et al. also observed prolonged duration of prophylaxis which contradicts international best practices and promotes AMR.\textsuperscript{4,5}

- Stop/review date was indicated in few (36%) instances thereby leaving the patients on antibiotic prescriptions for inappropriately long durations.

- Our findings also reveal poor utilization of Microbiology Laboratory services as targeted therapy was observed in only 3.8% of cases.
CONCLUSION

- GPPS has provided an insight into antimicrobial prescribing at UCH, Ibadan as the study showed a high rate of empirical, broad spectrum antimicrobial consumption.

- The success recorded following this survey include:
  - A hospital-wide grand round focused on antimicrobial stewardship to educate prescribers in UCH Ibadan.
  - Establishment of a multidisciplinary antimicrobial stewardship committee
  - Development of local antibiotic prescription guidelines for the paediatrics units.

- The point prevalence survey has expanded to include 17 tertiary hospitals in Nigeria.

- Finally, surveillance of antimicrobial prescribing practices is an important step towards curbing the scourge of antimicrobial resistance.
REFERENCES


7. Sostaric N, Rozic M, Versporten A, Goossens H, Beovic B, and the Global-PPS Ljubljana Study Group. The global point prevalence survey of antimicrobial consumption and resistance (Global-PPS): first results of antimicrobial prescribing in University Medical Centre Ljubljana,(UMCL), Slovenia


THANK YOU