

Validation of IRIS-100

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Resume

Introduction: The department of Clinical Microbiology at Hvidovre Hospital performs manual readings and measurements of inhibition zones from disk diffusion on isolates from blood cultures. Manual reading is a method with a risk of results with interpersonal variations. In this project we are investigating if the semi-automatic inhibition zone reader IRIS-100 can standardize the reading of inhibition zones from disk diffusion. The purpose of the project is to compare semi-automatic readings from IRIS-100 with manual readings (Golden Standard).

Method: 70 isolates from blood culture was used for the project. Primary and secondary susceptibility testing was carried out for all 70 isolates. The inhibition zones were measured by IRIS-100 and manually and finally interpreted by the SIR method (Sensitive, Intermediate, Resistant). Deviations between the result from the two methods were registered as "very major error", "major error" or "minor error".

Results: The results have been divided into gram positive and gram-negative bacteria. The gram-positive bacteria in total had an average compliance of 91% with a total deviation of 9%. The deviations were primarily recorded for the bacteria *Staphylococcus aureus* on the antibiotic disks infused with erythromycin, clindamycin, linezolid and moxifloxacin. No major errors were observed for the group of gram-positive bacteria. The gram-negative bacteria in total had an average compliance of 97% with a total deviation of 3%. Most deviations were recorded for the bacteria *Escherichia coli* and *Klebsiella pneumoniae* on the antibiotic disks infused with ampicillin, ciprofloxacin, amoxicillin-clavulanic-acid and cefuroxime. Two very major errors were observed for ciprofloxacin*.

Conclusion: The validation project presents results with great compliance between the two methods and it can be concluded that IRIS-100 can standardize the reading of disk diffusion inhibition zones.

*Note. The two very major errors are most likely due to errors in the golden standard reference. See explanation on page 37 in the report.