



09 July 2015

Request for Comments on UK Standards for Microbiology Investigations (SMIs) Bacteriology document (B 59) Detection of Enterobacteriaceae producing Extended Spectrum β -Lactamases and (B 60) Screening and Detection of Bacteria with Carbapenem-Hydrolysing β -lactamases (Carbapenemases)

Response from the Institute of Biomedical Science

The Institute of Biomedical Science (IBMS) is the UK professional body for biomedical science. It represents approximately 20,000 members employed mainly in NHS laboratories, NHS Blood and Transplant, Public Health services, private laboratories, research, industry and higher education. In its capacity as a standard setting organisation, and also an HCPC approved education provider, the Institute welcomes the opportunity to contribute to the consultation on the UK SMI bacteriology documents B59 and B60.

The comments below have been compiled from those made by the members of the IBMS' Specialist Advisory Panel for Medical Microbiology:

Document B59

The IBMS is happy with this document and has no comments to make.

Document B60

Section: Introduction

Subsection: Acquired carbapenemases

1. The link to www.lahey.org/studies seems to take you to the ESBL page not carbapenemases

Section 4: Specimen processing/procedure

Subsection: 4.7 Antimicrobial susceptibility testing

1. Paragraph 5: *EUCAST has therefore recommended screening cut-off values (table 4).....*

The IBMS would like to suggest that faropenem is included as an indicator disc (evidence is cited below). This disc is now commercially available.

Use of faropenem as an indicator of carbapenemase activity in the Enterobacteriaceae.

Day KM¹, Pike R, Winstanley TG, Lanvon C, Cummings SP, Raza MW, Woodford N, Perry JD.

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Abstract

The aim of this study was to determine the ability of a disc susceptibility test using faropenem (10 µg) to predict carbapenemase activity in Enterobacteriaceae. A collection of 166 isolates of carbapenemase-producing Enterobacteriaceae (CPE) and 82 isolates of Enterobacteriaceae that produced other β-lactamases was compiled from diverse sources. Disc susceptibility testing was performed using the CLSI/EUCAST methodology with discs of faropenem (10 µg), temocillin (30 µg), and four carbapenems (each 10 µg). A further prospective evaluation of the faropenem disc susceptibility test was performed using 205 consecutive isolates referred to a United Kingdom reference laboratory in parallel with molecular methods for carbapenemase detection. Of 166 isolates of CPE, 99% showed growth up to the edge of a 10-µg faropenem disc compared with only 6% of other β-lactamase producers (sensitivity, 99%; specificity, 94%). A "double zone" around 10-µg faropenem discs was frequently associated with OXA-48 producers. Of the carbapenems, the most useful agent was imipenem, where a zone diameter of ≤ 23 mm as a predictor of carbapenemase activity had a sensitivity of 99% and a specificity of 85%. The presence of no zone of inhibition around a 30-µg temocillin disc was a consistent feature of strains producing OXA-48 carbapenemase. For 205 isolates of Enterobacteriaceae referred to a United Kingdom reference laboratory, growth up to a 10-µg faropenem disc correctly identified 84 of 86 carbapenemase producers (98% sensitivity), with a specificity of 87%. Disc susceptibility testing using faropenem (10 µg) is a simple, convenient, and highly predictive screening test for carbapenemase-producing Enterobacteriaceae.