To the Editors:

Optochin-resistant *Streptococcus pneumoniae*

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Streptococcus pneumoniae (pneumococcus) remains a major cause of mortality and morbidity at the extremes of age. With increasing antibiotic resistance, its accurate early identification is important for initial management [1]. Its identification in clinical laboratories relies on colony morphology, α-haemolysis on blood agar, and optochin susceptibility. The bile solubility test, although simple, is not widely used [1]. Other methods used include molecular assays and species-specific capsular antigen detection.

Ethylhydrocupreine hydrochloride (optochin) is a quinine derivative used to differentiate pneumococci from viridans streptococci [1]. Frozen storage of pneumococci in glycerol may affect the optochin phenotype [2]. The optochin susceptibility is performed on blood agar by disk diffusion using commercially available discs [3]. There are 2 optochin-resistant phenotypes: uniformly optochin-resistant (homogenous) type and the (heterogeneous) type with the presence of a subpopulation within the inhibition zone [1].

Optochin resistance in pneumococci was first reported from Finland in 1987, and has since been reported widely [1]. We report such a case isolated from Sri Lanka, to alert clinicians and clinical microbiologists to the existence of these strains locally.

A 4-year old boy was admitted to the Teaching Hospital, Kandy with acute meningitis. Blood was obtained for culture and the patient was given intravenous cefotaxime. After 24-hour incubation, α-haemolytic colonies grew on blood agar and chocolate agar, with no growth on MacConkey agar. The gram stain of the culture revealed gram-positive diplococci. The optochin test which was repeated with several discs did not show a zone of inhibition around the disc. The isolate was confirmed as *Streptococcus pneumoniae* by species-specific capsular antigen detection. It belonged to the homogeneous resistance type, and the strain was susceptible to antibiotics, including penicillin (minimum inhibitory concentration: 0.06 μg/ml by E-test).

We believe that clinical laboratories using the optochin test as the only method to differentiate viridans streptococci from pneumococci should use an additional method, such as the bile solubility test or the species-specific capsular antigen detection test, to identify the isolate as pneumococcus. Accurate identification is important because of the existence of multi-drug resistant *Streptococcus pneumoniae* locally [5].

References

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