

# Valsad Philip Verghese et al. Increasing Incidence of Pencillin- and Cefotaxime-resistant Streptococcus pneumoniae Causing Meningitis in India: Time for Revision of Treatment Guidelines?

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## Background

- Pneumococcal infections are common in un-immunized children & pneumococcal meningitis has a very high mortality rate. Change in antibiotic susceptibility break points (CLSI) for pneumococcal meningeal strains with regards to penicillin & cefotaxime since 2008 & trends of increasing resistance of pneumococcus to penicillin & cefotaxime.

## Methods

- Lab based prospective study done at a tertiary care hospital in south India from January 2008 to August 2016. Samples from CSF, Blood & sterile body fluids were analyzed & only culture positive isolates were included. Correlation with clinical details were done for site specific infections.

## Results

- Total of 830 invasive pneumococcal isolates were identified & 167 isolates caused meningitis. 90 isolates caused meningitis in children less than 16 years.
- Out of the 167 isolates causing meningitis, 73(43.7%) were non-susceptible to penicillin and 25(14.9%) were non susceptible to both cefotaxime & penicillin.
- Treatment failure rates were high when cefotaxime/ceftriaxone was used for cefotaxime intermediate susceptible meningeal strains.

# ACADEMIC P.E.A.R.L.S

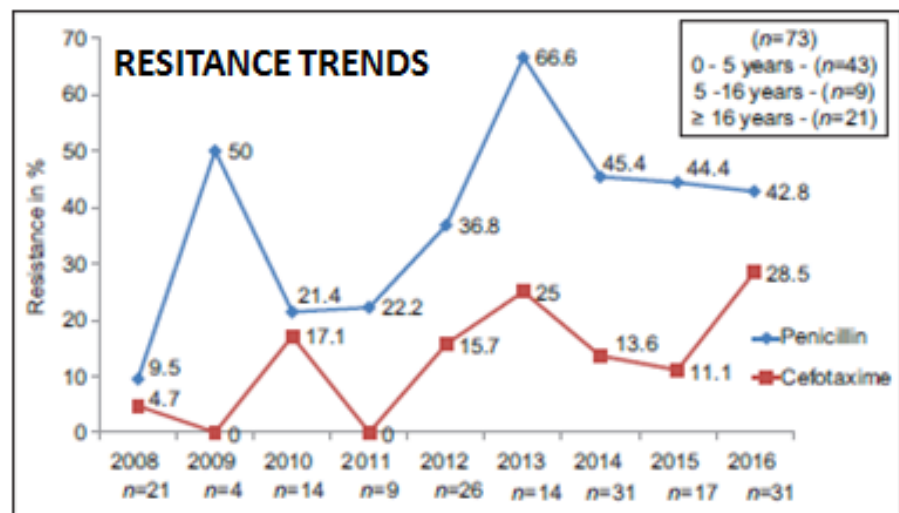
Pediatric Evidence And Research Learning Snippet



## Changing Local Resistance Pattern in Pneumococcal Meningitis

AGE GROUPS	MENINGEAL ISOLATES (N -167)		
	PENICILLIN RESISTANCE	CEFOTAXIME INTERMEDIATE SUSCEPTIBILITY (MIC 2)	CEFOTAXIME RESISTANCE (MIC ≥ 4)
ALL AGES	73/167(43.7%)	17/167 (10%)	8/167 (5%)
0-5 YEARS	43/72 (60%)	9/72 (12%)	4/72 (5.5%)
5-16 YEARS	9/18 (50%)	3/18 (2.5%)	1/18 (0.6%)
≥ 16 YEARS	21/77(27%)	5/77 (7%)	3/77 (4%)

Among pneumococcal meningeal isolates during the study period (2008-2016), penicillin resistance & cefotaxime non-susceptibility increased from 9.5% to 42.8% & 4.7% to 28.5%.



**Conclusions:** There maybe a significant increase in penicillin resistance & cefotaxime non-susceptibility in pneumococcal meningitis in some parts of India. This emphasizes the need for empirical vancomycin along with ceftriaxone/cefotaxime in patients with suspected bacterial meningitis, in such a scenario.

## EXPERT COMMENT



“We should be mindful of the developing local resistance patterns among microorganisms and empirical antibiotics choice should be based on local antibiograms.”

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## Reference

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