

Pediatric pneumococcal carriage for Jordan: Coverage of old and future pneumococcal conjugate vaccines in the periods 2008-2010 and 2015-2019**Adnan Al-Lahham**

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Background: Pneumococcal carriage is a prerequisite for invasive and non-invasive infections, where children and elderly are the most vulnerable age groups. Pneumococcal conjugate vaccine PCV7 is available in Jordan since year 2000, followed by PCV13 in the year 2010. Both vaccines are available only in the private market. **Aims:** Determine the carriage rate of children attending Day Care Centers (DCC) in north Jordan with the resistance rates and the possible coverage of the old and future pneumococcal conjugate vaccines (PCV). **Methods:** Nasopharyngeal swabs (NP) were taken from healthy Jordanian children from north Jordan with ages ranging from one month to 14 years in the period from 2008 to 2019. Swabs were cultivated on Columbia Blood Agar base supplemented with 5% sheep blood and incubated at 37°C for 18-24 hours. Suspected alpha hemolytic isolates were tested for optochin sensitivity and bile solubility. Antimicrobial susceptibility testing was performed using the Vitek2 compact system and E-test (BioMérieux). Serotyping was done by the Neufeld Quellung method. **Results:** A total of 1866 NP-swabs were tested with a total of 733 (39.3%) pneumococcal carriers. The periods 2008-2010 and 2015-2019 indicate fluctuations in carriage, resistance and coverage of available and future vaccines. For both periods, resistance rates to penicillin, clarithromycin, clindamycin, trimethoprim-sulfamethoxazole, tetracycline, and chloramphenicol was as follows: 89.3%, 64.8%, 36.3%, 73.0%, 56.6%, and 3.1%, respectively. Predominant serotypes were 19F (17.6%), 6A (8.9%), 23F (8.1%), 6B (7.9%), 11A (6%), 14 (5.6%), and 19A (5.2%), respectively. Coverage of PCV7, PCV10, PCV13 and the future PCV20 was 41.7%, 42%, 57.7%, and 73.1%, respectively. A total of 493 cases had a previous 1-3 PCV7 injections, among which 256 (51.9%) cases were pneumococcal carriers, distributed as non-PCV vaccine serotypes (31.6%), and with PCV vaccine types (68.4%). **Conclusions:** The potential inclusion of the PCV vaccination program for children in Jordan would have an impact of decreasing carriage, resistance and indirectly the pneumococcal infections, especially the future PCV20.