

SERO-EPIDEMIOLOGY OF INVASIVE PNEUMOCOCCAL DISEASE AND PNEUMOCOCCAL PNEUMONIA IN ADULTS IN TORONTO, CANADA, 2002-2011

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BACKGROUND: In Ontario, PCV7 was authorized in 2001. Publicly-funded PCV7 was introduced in 01/2005, PCV10 in 10/2009 and PCV13 in 11/2010. PCV7 vaccination dramatically decreased IPD due to strains included in PCV7. The effects of PCV10 and PCV13 vaccination programs on adult disease are uncertain.

METHODS: TIBDN has conducted population-based surveillance for invasive pneumococcal disease (IPD) and lab-confirmed non-bacteremic pneumococcal pneumonia (NBPP, Musher criteria) since 2002 in Toronto/Peel. Serotyping to CLSI standards is performed.

RESULTS: 4250 cases of adult IPD/NBPP were identified. In adults >65ys, the IPD rate decreased from 33.8 to 19.5/100000/y (2002-11). The IPD rate due to serotypes in PCV7 decreased from 18.8 to 1.6/100000/y; IPD due to serotypes in PCV13/not7 increased from 5.2 to 12.5/100000/y (2002-10) and decreased to 7.9/100000/y in 2011. IPD due to non-conjugate vaccine (NPCV) serotypes remained relatively stable (9.8 to 10.0/100000/y, 2002-11).

The IPD rate in adults 15-64ys was 5.2 (2002) and 4.4/100000/y (2011). The IPD rate due to PCV7 serotypes decreased from 3.0 to 0.3/100000/y; IPD due to PCV13/not7 serotypes increased from 1.0 to 2.2/100000/y (2002-10) and decreased to 1.8/100000/y in 2011. IPD due to NPCV serotypes increased from 1.2 to 2.2/100000/y (2002-05) and was then stable (2.3/100000/y in 2011). Changes in serotype distribution are larger than changes in incidence.

CONCLUSIONS: Overall, IPD rates decreased 15% in adults 15-64ys and 42% in >65ys (2002-2011). Infant PCV7 dramatically reduced the incidence of adult IPD/NBPP due to PCV7 serotypes and following introduction of PCV10 and PCV13, adult IPD due to the additional serotypes has fallen.