**INCREASED Streptococcus pneumoniae SURVEILLANCE IN LATIN AMERICA SIREVA-VIGIA GROUP 1999 - 2002**

Di Fabio JL and the SIREVA-VIGIA Latin America Surveillance Group.

Pan American Health Organization, USA and National Reference Public Health Laboratories in Latin American countries

difabio@paho.org

**INTRODUCTION**

Since 1994, the Pan American Health Organization (PAHO) has coordinated a surveillance network with National Reference Laboratories in Latin America aimed at monitoring capsular types and antimicrobial susceptibility of Streptococcus pneumoniae causing invasive disease, mainly in the pediatric population. The availability of a capsulated vaccine for children (PCV7), the ongoing development of expanded vaccine formulations, and the geographic and age-related differences in seroprevalence that have been reported worldwide reinforce the importance of regional surveillance of S. pneumoniae. We present serotype distribution and penicillin and cefotaxime/ceftriaxone susceptibility of invasive pneumococcal isolates from 15 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela.

**MATERIAL AND METHODS**

Jointly funded by PAHO and the Canadian International Development Agency since 1994, the SIREVA-VIGIA Latin American Group has grown from 6 to more than 15 countries that are participating in epidemiological surveillance of invasive pneumococcal disease, mainly in the pediatric population. Data presented here include capsule serotype distribution and penicillin and cefotaxime/ceftriaxone susceptibility of invasive pneumococcal isolates collected from 15 countries between January 1999 and December 2002.

Strains were identified by standard methods and serotyped by Quellung reaction with pooled, type-specific and group factor sera from Bacterie Serumenquellung, Copenhagen, Denmark.

Antimicrobial susceptibility testing for penicillin and cefotaxime/ceftriaxone was performed using the NCCLS reference broth microdilution method. S. pneumoniae ATCC 49619 was included as the control strain.

The SIREVA-VIGIA Group collaborates with the National Centre for Streptococcus (NCS) in Edmonton, Alberta, Canada. The Centre coordinates an ongoing quality control quality assurance program for serotyping and antimicrobial susceptibility testing for 3 sub-regional laboratories: Brazil, Colombia and Mexico. Each of these sub-regional laboratories uses the NCS model as a basis for the quality control programs that they provide for their specific participating countries.

**RESULTS**

From January 1999 to December 2002, a total of 8,047 invasive pneumococcal isolates were collected from 15 Latin American countries: Argentina (762), Bolivia (47), Brazil (2,343), Chile (1,744), Colombia (919), Cuba (2,084), Dominican Republic (420), Ecuador (582), Mexico (2,866), Nicaragua (24), Panama (42), Paraguay (535) Peru (50), Uruguay (352) and Venezuela (253). Sixty percent of these isolates were from children < 6 years old, who were grouped primarily with penicillin (47%) and meningitis (43%).

Figure 3 shows distribution by region.

Reduced susceptibility to penicillin was detected in 36.3% of isolates from children < 6 years of age (20.3% were intermediate and 16.0% were resistant). These data are shown by region in Figure 4. Among isolates from children with meningitis, 6.8% showed intermediate resistance and 3.5% were fully resistant to cefotaxime/ceftriaxone with minor regional differences as shown in Figure 5.

**DISCUSSION**

The comparison between data from 15 Latin American countries (1999-2002) and those from the previous period (1992-1998) showed no significant differences in the distribution of pneumococcal serotypes, even though 6 countries have been added to the pneumococcal network. Serotypes 1, 5 and 6A remains as important types not included in current available vaccines while 6B has emerged in 6 countries.

Continued nationwide surveillance of pneumococcal infections remains a priority and should be encouraged and supported specially in developing countries where the benefits of vaccination and proper use of antibiotics have a high impact on improvement of public health.

**CONCLUSIONS**

The use of these data sets, the T-variant vaccine has coverage of 65.5%, 66.1% and 56.4% in the southern, central and northern parts of the region, respectively. An increased in penicillin and third generation cephalosporin resistance was observed in all countries.

Among isolates from children with meningitis,

6.8% showed intermediate resistance and
3.5% were fully resistant to cefotaxime/ceftriaxone with minor regional differences as shown in Figure 5.