

## Chapter IV

# Working sessions of the Scientific Board

### 1 Organisation

The French National Observatory for Epidemiology of Bacterial Resistance to Antimicrobials (ONERBA) was founded in 1997 in order to:

- gather and analyse data regarding bacterial resistance to antimicrobials in France, and to compare these data with those obtained in other countries;
- provide data regarding bacterial resistance to antimicrobials to Health Authorities, Scientific Organisations, and health Professionals, upon request;
- promote quality data collection and analysis;
- initiate research on less well-documented issues of public interest;
- participate in training activities associated with the issues noted above, particularly by means of presentations and publications. In order to meet ONERBA's objectives, a Scientific Board (SB) was created in 1997. A number of the members of the SB were renewed in 2003, as is recommended in ONERBA's statutes. The activities of the SB and its relationship with the networks are described in the charter of the networks represented on the SB of ONERBA (see chapter V).

The SB meets during regular working sessions in order to:

- select topics of interest;
- define methods for collection and analysis;
- analyse and validate data;
- implement specific studies.

### 2 Calendar of the working sessions of the Scientific Board in 2007

February 8, March 21, May 24, June 26, September 26, November 21.

### 3 Summary of the working sessions of the Scientific Board in 2007

A detailed report of the working parties can be found in the French part of this paper.

### 4 ONERBA cross-networks survey

During a one month period (June 2007), 85 hospital laboratories participating in the surveillance networks affiliated to ONERBA were asked to systematically collect non-redundant strains of *P. aeruginosa* resistant to ceftazidime (Caz-R, as defined by the *Comité de l'Antibiogramme de la Société Française de Microbiologie* in 2007) except those obtained from screening samples and cystic fibrosis patients. The susceptibility tests were performed in each laboratory according to their routine testing method (*i.e.* agar diffusion or commercial microdilution systems). All isolates showing an inhibition zone diameter < 15 mm around the ceftazidime disk (30 µg) or with minimal inhibitory concentration (MIC) of ceftazidime > 32 µg/ml were sent to a central laboratory (Besançon) for further investigations. In addition, the total of patients with at least one clinical specimen positive for *P. aeruginosa* as well as the number of hospitalization-days were recorded in each participating centre during the study period. Upon reception of the strains, the central laboratory confirmed bacterial identifications by using API32GN strips (bioMérieux, Craponnes, France). Eighty-five hospital laboratories from 70 cities in France were enrolled in the study. The participating hospitals accounted for an annual activity of 17 million hospital-days, and a catchment population estimated to 13% of the French population. Public (university-affiliated or general) hospitals accounted for 95% of hospitalization-beds. During a one-month period, the participating centres isolated 2,326 non-redundant isolates of *P. aeruginosa*, with an attack rate of 0.76 cases per 100 admissions or a global incidence density rate of 1.58 per 1,000 patient-days. Ceftazidime resistance (MIC > 32 µg/ml) was confirmed for 140 strains. The resistance rates were similar between the university-affiliated (6.4%) and general (5.3%) hospitals, for a global incidence of Caz-R *P. aeruginosa* of 0.095 per 1,000 patient-days. The Caz-R strains were isolated from the airways (43%), the urinary tract (24%), superficial wounds (16%), abscesses (8%), vascular catheters (5%) and blood (4%) of patients hospitalized in intensive care (39%), medical (29%), surgical (16%), rehabilitation (6%), haematology (4%), burn (4%) or emergency units (2%). Among the 140 CAZ-R isolates collected in this study, 129 (92.1%) were found to overproduce AmpC cephalosporinase, and it was the unique enzymatic resistance mechanism to ceftazidime for 127 of them (90.7%). Penicillinases TEM-2, PSE-1, OXA-9, OXA-10, OXA-56 were associated with AmpC overproduction in 17 strains. Interestingly, 15 extended-spectrum β-lactamases were identified by PCR in 13 isolates. They belonged to Ambler class A (n=6), class B (n=4) and class D (n=5).

Three strains produced the extended-spectrum oxacillinase OXA-19 and one strain the carbapenemase VIM-2. This large multicentre epidemiological study shows that while mutational upregulation of intrinsic β-lactamase AmpC remains the most prevalent mechanism of resistance to ceftazidime, acquired extended-spectrum β-lactamases are quite frequent Caz-R

*P. aeruginosa* in France (9.3% of the 140 Caz-R isolates; 0.6% of the whole isolates).

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### Session organised by ONERBA in a National Meeting in 2007

#### ■ ONERBA - RICAI 2007: Antibiotic resistance of *Pseudomonas aeruginosa*, an update

- Resistance of *Pseudomonas aeruginosa* to antibiotics: ONERBA's data (Y. Costa).
- ONERBA trans-networks survey in 2007: *Pseudomonas aeruginosa* resistant to ceftazidime (X. Bertrand).
- *Pseudomonas aeruginosa* and antibiotics: methods of detection of resistance mechanisms (P. Plésiat).
- Management of multiresistant *Pseudomonas aeruginosa* infections (B. Guéry).

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### Publications of ONERBA and ONERBA's networks in 2007

#### ■ Réseau Aquitaine/Epiville

Eloy O, Blanc V, Pina P, Gaudart A, Bressolle ML, Plainvert C, Arpin C, Coulange L, Dubois V, André C, Fischer I, Fourmaux S, Grobost F, Jullin J, Dutilh B, Couture JF, Noury P, Lagrange I, Ducastaing A, Doermann HP, Quentin C. Extended-spectrum-beta-lactamase-producing Enterobacteriaceae strains in various types of private health care centers. *Antimicrob Agents Chemother* 2007 Sep;51(9):3440-4.

#### ■ Réseau AFORCOPI-BIO

De Mouy D, Fabre R, Cavallo JD, Arzouni JP, Baynat M, Bicart-See A, Berges JL, Bouilloux JP, Galinier JL, Garrabé E, Gontier P, Grillet N, Lepargneur JP, Naepels I, Payro G; le réseau AFORCOPI-BIO. Community-acquired urinary tract infections in 15 to 65 years old female patients in France. Susceptibility of *E. coli* according to history: AFORCOPI-BIO network 2003. *Med Mal Infect.* 2007 Sep;37(9):594-8.

#### ■ CNR Pneumocoque et ORP

Hamdad F, Canarelli B, Rousseau F, Thomas D, Biendo M, Eb F, Varon E, Laurans G. *Streptococcus pneumoniae* meningitis in Amiens Hospital between 1990 and 2005. Bacteriological characteristics of strains isolated. *Pathol Biol (Paris)*. 2007 Nov;55(8-9):446-52.

Cohen R, Levy C, Thollot F, de La Rocque F, Koskas M, Bonnet E, Fritzell B, Varon E. Pneumococcal conjugate vaccine does not influence *Staphylococcus aureus* carriage in young children with acute otitis media. *Clin Infect Dis.* 2007 Dec 15;45(12):1583-7.

Bekri H, Cohen R, Varon E, Madhi F, Gire R, Guillot F, Delacourt C. *Streptococcus pneumoniae* serotypes involved in children

with pleural empyemas in France. *Arch Pediatr.* 2007 Mar;14(3):239-43.

Gravet A, Camdessouens G, Murbach V, Barrand P, Boucher A, Boulenc A, De Briel D, Delarbre JM, Drzewinski JC, Flipo JL, Gherardi C, Grawey I, Gueudet T, Heidt A, Herzig V, Izraelewicz D, Jehl F, Kientz P, Lantz V, Lemble C, Pierrot P, Rieder C, Riehm D, Tytgat F. Evolution of antibiotic resistance of *Streptococcus pneumoniae*: results of Alsace observatory in 2005. *Pathol Biol (Paris)*. 2007 Nov;55(8-9):424-8.

Rapport d'activité 2007 du CNR des Pneumocoques. ([http://www.invs.sante.fr/surveillance/cnr/rapports\\_activite.htm](http://www.invs.sante.fr/surveillance/cnr/rapports_activite.htm))

#### ■ CNR des Mycobactéries et de la résistance des mycobactéries aux antituberculeux

Uffredi ML, Truffot-Pernot C, Dautzenberg B, Renard M, Jarlier V, Robert J. An intervention programme for the management of multidrug-resistant tuberculosis in France. *Int J Antimicrob Agents.* 2007 Apr;29(4):434-9.

Khuê PM, Truffot-Pernot C, Texier-Maugein J, Jarlier V, Robert J. A 10-year prospective surveillance of *Mycobacterium tuberculosis* drug resistance in France 1995-2004. *Eur Respir J.* 2007 Nov;30(5):937-44.

Jérôme Robert, Nicolas Veziris, Chantal Truffot-Pernot, Cristina Grigorescu, Vincent Jarlier. Surveillance de la résistance aux antituberculeux en France : données récentes. *Bulletin Epidémiologique Hebdomadaire* n°11, 20 mars 2007.

EuroTB and the national coordinators for tuberculosis surveillance in the WHO European Region. Surveillance of tuberculosis in Europe. Report on tuberculosis cases notified in 2006, Institut de veille sanitaire, Saint-Maurice, France. March 2008. [http://www.eurotb.org/rapports/2006/full\\_report.pdf](http://www.eurotb.org/rapports/2006/full_report.pdf) (The CNR-MyRMA provides resistance data of *M. tuberculosis* in France to EuroTB network).

#### ■ Réseau Microbiologie C-CLIN Est

Venier AG, Talon D, Patry I, Mercier-Girard D, Bertrand X. Patient and bacterial determinants involved in symptomatic urinary tract infection caused by *Escherichia coli* with and without bacteraemia. *Clin Microbiol Infect.* 2007Feb;13(2):205-8.

#### ■ Réseau des Armées

Jean-Didier Cavallo, Bruno Massit, Jean-Claude Chapalain, Patrick Brisou, Eliane Garrabé, Christophe Martinaud, Jean-Louis Koeck, Philippe Marsan, Dominique Lucas, Catherine Verret, Olivier Roman, Alain Todesco, René Migliani, André Spiegel. Portage nasal de *Staphylococcus aureus* chez des jeunes incorporés de la marine nationale. *Bulletin Epidémiologique Hebdomadaire* n°43, 6 novembre 2007.

#### ■ European Antimicrobial Resistance surveillance System (EARSS)

EARSS annual report 2006. [http://www.rivm.nl/earss/Images/EARSS\\_2006\\_Def\\_tcm61-44176.pdf](http://www.rivm.nl/earss/Images/EARSS_2006_Def_tcm61-44176.pdf)

(Three networks affiliated to ONERBA, i.e. APHP, Ile-de-France, and REUSSIR, provide antimicrobial resistance data to EARSS).