Virulence and Resistance in Staphylococcus aureus: 2016 State of the Art

Lyon, France
28 June – 1 July 2016

Target Audience
20 – 40 young microbiologists and infectious disease physicians with basic knowledge in bacteriology.

Faculty Members
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Course Objectives
• To provide to postgraduate microbiologists and infectious disease physicians (with basic knowledge in bacteriology) an updated overview of pathophysiology and resistance in Staphylococcus.
• To give to participants the opportunity to have state of the art, new insights and scientific exchanges on virulence and resistance on these pathogens including:
  – Mechanisms of resistance and virulence in vivo data, clinical management
  – Screening, detection and identification of virulence and resistance determinants in the daily lab
  – Infection control practice

ESCMID Postgraduate Education Course
Virulence and Resistance in Staphylococcus aureus: 2016 State of the Art

Organizer
ESCMID Study Group for Staphylococci and Staphylococcal Diseases (ESGS)

Co-Organizers
• The European Committee on Antimicrobial Susceptibility Testing (EUCAST)
• ESCMID Study Group for Antimicrobial Resistance Surveillance (ESGARS)
• ESCMID Study Group for Bloodstream Infections and Sepsis (ESGBIS)
• ESCMID Study Group for Epidemiological Markers (ESGEM)
• ESCMID PK/PD of Anti-Infectives Study Group (EPASG)

Course Coordinators
• Frédéric Laurent, Lyon, France
• François Vandenesch, Bron, France

Picture outside: Schematic structure of the penicillin binding proteins and peptidoglycan of methicillin resistant Staphylococcus aureus, courtesy of Frédéric Laurent

Picture inside: Intracellular Staphylococcus aureus (electron microscopy), courtesy of Frédéric Laurent
Tuesday, 28 June 2016

**Virulence**

13:30 Staphylococcal cell wall-associated virulence factors.
Mathias Herrmann

15:00 Mechanisms of action of staphylococcal toxins (PVL and pore-forming toxins, exfoliatives, PSMs, superantigens).
Gerard Lina & Oliver Dauwalder

16:15 Intracellular lifestyle of S. aureus.
To be confirmed

17:15 Regulation of virulence in S. aureus: non-coding RNA, virulence and global regulators.
Thomas Geissmann & Tarek Msadek

Wednesday, 29 June 2016

08:00 Staphylococcus: from commensalism/colonization to infection and decolonization.
Stephan Harbarth

08:45 Pathophysiology of staphylococcal bone and joint infection.
Frédéric Laurent & Tristan Ferry

10:45 Pathophysiology of staphylococcal bacteremia and endocarditis.
Carolie Bauwens & Winfried Kern

13:30 Pathophysiology of staphylococcal skin and soft tissue infections.
Anne Tristan & Yves Gillet

14:30 Biofilm-associated catheter infections and Staphylococcus.
David Lebeaux & Florent Valour

15:45 Staphylococcus aureus and cystic fibrosis.
Barbara Kohl

16:15 Staphylococcal colonization and infection in animals: epidemiology, pathophysiology and management.
Luca Guardabassi

17:15 Staphylococcal virulence through WGS.
François Vandenesch

Thursday, 30 June 2016

**Resistance**

08:30 Antimicrobial susceptibility tests for Staphylococcus and EUCAST recommendations.
Rafael Canton & Oliver Dauwalder

09:15 Anti-staphylococcal activity of antibiotics in biofilm and host cells.
Françoise Van Bambeke

10:30 Beta-lactams.
Frédéric Laurent & Robert Skov
- Mechanisms of action: from SASM to SARM
- Genetic support of beta-lactam resistance: bla, mec gene alphabet and PLP alteration
- Screening, detection, determination of beta-lactam resistance in routine

14:00 Lipo- and glyco-peptides.
Dana Dumitrescu
- Mechanisms of action
- Phenotypic and genetic support of resistance: from VSSA to h-VISA, VISA and VRSA... from van to multi-faceted mutations
- Detection of resistance in mg lab: why, when and how?
- In vivo activity and clinical case

Friday, 1 July 2016

08:15 Anti-staphylococcal antibiotics: the new ones and the future ones.
Johan Mouton

08:45 New approaches to circumvent Staphylococcus multi-resistance.
Johan Mouton

09:15 WGS and resistance in Staphylococcus: from research to routine.
Jodi Lindsay

10:30 Population genetics in S. aureus.
Hajo Grundmann

11:00 Epidemiology and dynamics of virulence resistance S. aureus clones.
Jean-Philippe Rasigade

11:50 Resistance and virulence in S. aureus: an integrative approach.
Naja Grundmann

Course Venue
Lyon-East Medical School
Institute of Pharmaceutical and Biological Sciences
University of Lyon
8 avenue Rockefeller
69008 Lyon, France

Registration Procedure
Register now online on the ESCMID website at www.escmid.org/education.
Registration deadline is 20 May 2016.

Registration Fee
EUR 850 for ESCMID members
(Full Membership/Young Scientist Membership)
EUR 1000 for all others

The registration fee includes 3 nights of accommodation (28, 29 and 30 June), lunches, coffee breaks, teaching materials and social activities. Travel is not included.

Attendance Grants
ESCMID provides a number of attendance grants for ESCMID “young scientist members”. The grant covers the registration fee. Travel is not included. Please apply via the ESCMID website at www.escmid.org/education before 15 April 2016.

CME Accreditation
The organizers of the course will apply for European CME accreditation through EACMCE.