**Hemodynamic management and monitoring of patients with shock**

**Scientific Committee:**

Hamzaoui O (Reims)

Teboul JL (Paris)

Mourvillier B (Reims)

Chew M (Sweeden)

Jan Bakker (Rotterdam)

**Session 1**

**Day 1: Basic cardio-vascular applied physiology and pathophysiology**

**Morning**

1. Presentation of the course O Hamzaoui and Mourvilliers (Reims)
2. Pathophysiology of shock states JL Teboul (Paris) / X Monnet (Paris)
3. All you need to know about arterial pressure
   1. Physiological determinants of arterial pressure JL Teboul (Paris)
   2. Bedside use of arterial pressure O Hamzaoui /B Saugel (Germany)

**Afternoon**

1. **All you need to know about cardiac output**
2. Physiological determinants M Pinsky (USA)/ Cecconi M (Italy)
3. Measurements: techniques, indications & limits X Monnet (Paris) / A Messina (Italy)
4. **Wooclap**

**Day 2: Peripheral perfusion, microcirculation and tissue oxygenation markers**

**Morning**

1. Mottling as a tool to guide management H Ait Oufella (Paris)
2. Capillary refill time as a tool to guide management G Hernandez (Chili)
3. Lactate as a tool to guide management J Bakker (USA)

**Afternoon**

1. ScvO2 JL Vincent (Belgium)/O Hamzaoui
2. PCO2 gap JL Teboul (Paris)
3. Microcirculation D De Backer (Belgium)
4. Wooclap

**Session 2**

**Day 1: Hemodynamic assessment in critically ill patients**

**Morning: Monitoring devices**

1. Transpulmonary thermodilution O Hamzaoui / M Jozwiak (Nice)
2. Pulmonary artery catheter JL Teboul (Paris)
3. Uncalibrated and non-invasive devices B Saugel (Ger) / F Michard (Switzerland)

**Afternoon: How to use echocardiography to manage shock**

1. The left ventricular systolic function M Chew (Sweden)/ M Slama (Amiens)
2. The right ventricle A Vieillard-Baron (Paris)
3. Diastolic LV function and filling pressures P Vignon P (Limoges) / J Wang (UK)
4. Vexus protocol H Soleiman (UK)
5. Clinical cases and scenarios O Hamzaoui

**Day 2: Fluid therapy in critically ill patients**

**Morning: Assessment of fluid responsiveness**

1. Why and when? JL Teboul (Paris)
2. How to do during mechanical ventilation?
   * + 1. Applied physiology: Heart-lung interactions X Monnet (Paris)
       2. Static and dynamic parameters R Shi (China)
3. How to do during spontaneous breathing? O Hamzaoui / S Preau (Lille)

**Afternoon**

1. Which solution should we choose? D Debacker (Belguim) / A Perner (Denmark)
2. Effects of fluids on macro and microcirculation G Ospina-Tascon (Colombia)
3. How to manage fluid accumulation? M Malbrain (Belgium)
4. Wooclap O Hamzaoui

**Session 3**

**Septic shock**

**Day 1**

**Morning**

1. Hemodynamic disturbances in septic shock JL Teboul (Paris)
2. Hemodynamic management of septic shock O Hamzaoui
3. Septic cardiomyopathy: diagnosis and medical treatment A Vieillard Baron (Paris)

**Afternoon**

1. Is there a place for ECMO? N Aissaoui (Paris)
2. Is there a place for hemoadsorption? M Ostermann (UK)
3. Targeted therapy F Meziani (Strasbourg)/Gibot S (Nancy)

**Day 2**

**Morning: Vasopressors in septic shock**

1. Norepinephrine: when, why, how much? JL Teboul (Paris) / O Hamzaoui
2. Vasopressin: a good alternative? O Hamzaoui / A Gordon (UK) /P Asfar (Angers)
3. Place of steroids in septic shock D Annane (Paris)
4. What is in the pipeline? D De Backer (Belgium)/ Ostermann M

**Afternoon: Clinical cases**

**Session 4**

**Day 1: Cardiogenic shock**

**Morning**

1. Cardiogenic shock: classification and diagnosis N Aissaoui (Paris)
2. Hemodynamic monitoring O Hamzaoui
3. Drug management of cardiogenic shock B Levy (Nancy)

**Afternoon**

1. ECLS for cardiogenic shock A Combes (Paris) / M Schmidt (Paris)
2. Place of percutaneous angioplasty L FAROU (Reims)
3. Management of severe pulmonary embolism A Mercat (Angers)
4. Wooclap and clinical cases

**Day 2**

**Morning**: **Hemorrhagic shock states**

1. Hemorrhagic shock: pathophysiology TBA
2. General management of shock due to GI hemorrhage TBA
3. General management of shock due to severe polytrauma TBA
4. Blood transfusion in critically ill C Aubron (Brest)

**Afternoon: Clinical cases**

**Session 5**

**Day 1:**

**Morning**: **Hemodynamic issues in patients with ARDS patients**

1. Cardio-vascular alterations A Mekontso-Dessap (Paris)
2. How to manage fluids? X Monnet (Paris) / JL Teboul (Paris)
3. Hemodynamic implications of prone position M Jozwiak (Nice)

**Afternoon**

1. Hemodynamic consequences of severe asthma M Caplan (Reims)
2. Intubation-induced cardiovascular collapse S Jaber (Montpellier) / S Myatra (India)
3. Weaning-induced pulmonary edema JL Teboul (Paris)
4. Shock states related to drug poisoning B Megarbane (Paris)

**Day 2**

**Morning:**

**Cardiac Arrest:**

CPR: How to do in 2024 and what outcome? A Cariou (Paris)

Treatment of Post resuscitation Syndrome M Jozwiak (Nice)

**Afternoon:**

**Clinical cases and scenarios** O Hamzaoui

**Questions and answers (all the programme)** O Hamzaoui / JL Teboul (Paris)