

# Multiorgan dysfunction syndrome

**Multiple organ dysfunction syndrome** (multiple organ dysfunction syndrome, MODS ; the aggravated condition is MOF - multiple organ failure) is a condition with impaired organ function in an acutely ill patient, when the body cannot ensure homeostasis without external intervention.

Epidemiology: common disease, treated in ICU and treatment is expensive.

Severe sepsis often leads to MODS. The failure usually occurs gradually, the sequence is individual.

## Respiratory system

The most common and first affected organ. It is either the primary reason for sepsis (pneumonia, abscess) or, more commonly, due to SIRS. The basic form is ARDS or its milder form ALI (acute lung injury).

Inflammatory syndrome with increased vascular permeability associated with clinical, radiological and physiological abnormalities without elevation of pressure in LS. Main symptom: hypoxemia (given by PL short circuit, ventilation and perfusion imbalance,...).

## Renal failure

Oliguria is a common symptom. Initially, it is a compensatory mechanism for hypovolemia, later acute renal failure develops due to changes in microcirculation.

## Liver failure

The liver absorbs a large proportion of circulating endotoxins and pathogens. Biochemical response may occur early, liver failure usually comes later. Another effect is the overall hypoperfusion of the splanchnic.

## Cardiovascular system

Myocardial dysfunction can be found in almost 40% of patients with sepsis. The cause is a microcirculation disorder, cardiodepressive effects (some mediators of inflammation). Arrhythmias and tachycardia are common.

Circulatory changes during SIRS :

- at the beginning: compensatory increase in cardiac index, heart rate, decrease in systemic vascular resistance (SVR);
- later: hyperkinetic circulation, further reduction of SVR, short-circuits appear in the microcirculation - anaerobic metabolism;
- stage of shock: extremely low SVR, hypotension ;
- terminal phase of shock: circulatory collapse without response to fluids, catecholamines.

## Dysfunction of blood circulation

Mainly changes in coagulation - DIC. It is present from the very beginning (endothelial disorder), but the picture of coagulopathy may not be developed. Developed DIC tends to be late.

## GIT failure

Already in the early stages, we can see hypoperfusion of the splanchnic - a passage disorder up to paralytic ileus. Damage to the mucous membrane → loss of protective function → resorption of toxins, ulcers. Dysmicrobia is often present after ATB.

## CNS disorders

Restlessness, confusion, delirium or amnesia. convulsions, paresthesia, disorders of consciousness.

A possible neuroinfection must always be differentiated.

## Links

### Related articles

- Rival
- Sepsis
- SIRS

## Source

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2009]. <<http://jirben.wz.cz>>.