



Editorial

Empiric anti-infective agents of intra-abdominal infection

Tratamiento antibiótico empírico de la infección intraabdominal

Intraabdominal infection (IAI) is one of the most common diseases in surgical areas. Despite improved knowledge of the cellular bases of the inflammatory response and the advances in the treatment of septic shock, the morbidity and mortality of patients with IAI is high¹ (above all more severe patients and those with greater co-morbidity), and this consumes an important part of the human and economic resources of many hospital departments.

At present, the cornerstones of IAI treatment are perioperative resuscitation, nutritional support, antibiotic treatment and the control of the source of the infection. In this respect, there is evidence suggesting that delay in diagnosis, inadequate resuscitation,² the empiric unsuitability of antibiotic treatment,³ and the deficient control of the source of infection⁴ are risk factors for treatment failure. However, the weight of each of these factors in relation to the prognosis may be different depending on the type of infection and its consequences. For example, while suitable control of the source is fundamental for treating complicated appendicitis, unsuitable empirical antibiotic treatment of a biliary infection with bacteraemia and shock can be mortal.

The recommendations for the empirical antibiotic treatment of IAI⁵ first try to reflect the need to integrate into the healthcare continuum all the agents participating in the treatment of patients affected with a serious IAI. Even though it is the surgeon who must direct antibiotic treatment of IAI, fluid communication with specialists in Pharmacology and Microbiology is necessary in order to jointly assess the efficacy of new antibiotics and the most relevant aspects regarding the identification of IAI and bacterial resistance. Furthermore, given the importance of the protocolised resuscitation of patients with serious infections,² it is necessary to coordinate efforts and protocols with the anaesthesia and intensive care departments in order to optimise the perioperative treatment of IAI patients.

Secondly, the recommendations emphasise the need to quickly identify the severity of the patients' infection using different parameters and scales which can identify at-risk patients, and prioritise the values which can easily be applied at the first health care level (systemic inflammatory response syndrome [SIRS]^a and serum lactate levels). Furthermore,

in view of the fact that the infection evolves quickly and in order to accurately detect at-risk patients, patients meeting the 4 SIRS criteria, without hypotension or any other organ failure, were considered to be suffering from severe sepsis. Likewise, measuring serum lactate levels can identify patients with severe infection before they show haemodynamic signs of septic shock.⁶ The consensus document also considers nosocomial or postoperative IAI to be a serious infection. The consequences of surgical trauma on the modulation of the immune/inflammatory response is beyond all doubt,⁷ and could be the cause of both the delay in the diagnosis of IAI and secondary pathogen infections which are resistant to conventional antibiotic treatment.

Thirdly, the document assesses the causes of treatment failure with regard to the antibiotic treatment, and not only emphasises the narrow antimicrobial spectrum (mainly because of the increase of enterobacteria producing beta-lactamases), but also warns about the importance of an early start of treatment, giving correct dosages, and the need to assess the pharmacokinetic-pharmacodynamic parameters which can improve the efficiency of antibiotic treatment. In this respect, delaying antibiotic treatment can have terrible consequences in highly bacterial infections, such as IAI of biliary origin.

Fourth, given the difficulty in developing new antibiotics in a setting of increased bacterial resistance,⁸ the recommendations consider that duration, selective treatment depending on the patient's risk factors, and rescue therapy are added values in the context of sustainable healthcare. The aim of this consensus document is to consolidate the belief amongst surgeons that the best treatment is not the most lasting one but the one which is the most effective in the shortest possible time. It is necessary to stress that, as well as the secondary effects of antibiotics (sensitisation and diarrhoea, mainly), there is the masking of the infection or

^aSIRS criteria, having 2 or more of the following parameters: core body temperature >38°C or <36°C; heart rate over 90 bpm; respiratory rate >20/min or PaCO₂ below 32 mm Hg; and cell count >12 000 or <4000/mL or over 10% immature band cells.

relapses due to a lack of control of its source, resulting in the appearance of bacterial resistance during treatment.

The best treatment for IAI has still to be found. The best treatment must consider: improved knowledge of the physiopathology of sepsis and the host-pathogen interaction; the identification of biological markers sensitive to serious infection; early microbiological diagnosis; the use of better techniques to control the source; and the development of new antibiotics which are less toxic, resistant to bacterial adaptation mechanisms and more effective in the source of the infection. With these premises, we will be able to develop a solid and effective treatment within the framework of sustainable health care.

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