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Peroperative control of surgical infections

C. de Werra, I. Donzelli, S. Tramontano, M. Perone, P. Forestieri

Department of General, Oncological, Geriatrical Surgery and Advanced Technologies, General Surgery Unit, University of Naples "Federico II", Naples, Italy

Abstract. The overall incidence of post-surgical infection actually amount to 3-10%, in different multicentric trial, although the data may underrepresent the true incidence of such infections owing to increase of day-surgery. Antibiotic prophylaxis rapresents the first choice in the management of surgical patients, which standardization and selection can determine a real protection for all the operating time. Standardization of intraoperative procedure, considering utility of a multistep precautionary measure and the weight of these measures on post-operative stay of patients, may be an arm for control really post-operative infectious complications, according with control of sterilization's procedures and diffusion of dedicated device.

Key words: Surgical infections, peroperative control

The overall incidence of post-surgical infection actually amount to 3-10%, in different multicentric trial, although the data may underrepresent the true incidence of such infections owing to increase of day-surgery; in Italy, a recent assessment weighs incidence at 6,8%, of over four thousand of surgical procedures (1). Of these, about 60% consists of surgical site infections (SSI). The knowledge of process related to genesis of post-surgery infection leads us to recognize patients with high risks of infection-related complication and to prevent them. These risk factors are patient-related, surgical procedure-related and surgeon-related (or operating room-related): for all types, strategy of prevention is now spreading. This line can take a reduction superior to one third of surgical infections, reducing many costs related to infections (2): these new guidelines and programs for surveillance of nosocomial infections are diffusing from many government, for standardization of procedure and diffusion of medical devices that reduce risk of contamination.

Antibiotic prophylaxis rapresents the first choice in the management of surgical patients, which standardization and selection can determine a real protection for all the operating time. Actually, international guideline relates type of patient and type of surgery (clean, clean-contaminated, contaminated and dirty) with utilization of antibiotics. Antibiotic prophilaxis regards clean surgery, only when prothesis are utilized, it is used for clean-contaminated and for contaminated surgery, while in dirty procedures antibiotics are therapeutic more than prophylactic. Controversial remains about mastectomy, specially if surgical time exceed two hours or if an abscess is drained. The ultrashort prophylaxis, a single dose within thirty minutes since beginning operation, is now the most effective method; in alternative, the short prophylaxis, 1-2 hours before surgery, can be applied, specially for cephalosporin (3).

But the real intraoperative prophylaxis methods regard the so-called "gentle hand", all the procedures of surgeons reducing surgical trauma and stress, aiding physiologic response and lowering risk of contact with etiologic agent causing SSI. Most attention is right for surgical technics, taking care of wound's vasculariza-

tion, avoiding ischemia of margins, taking complete haemostasis of all areas, reducing to the least cauterization of tissues, removing foreign body, closing died spaces, completing every procedures with adequate antiseptic washing. Most trials evidence utility of standardization for pre-operative procedures, such as tricothomy, skin sterilization and surgeons' preparation, and of a rational use of drainage, urinary and venous catheterization, for the risk of carrying pathogenous. A possibility of prophylaxis can be obtained also with preservation of physiologic body temperature, extending O_2-administration in post-surgery (4) and preserving stable glycemia levels (5). In addition to consolidating these rules, a diffusion of miniinvasive surgery can determine a further reduction, because of reducing wounds, hospital staying and surgical stress: this approach is preferred in many centers, but the same several rules of technical surgery and control of contamination have to be observed.

Recently, new medical devices have developed for limiting bacterial diffusion, for reducing reaction to foreign body and for determine local protection with topics antiseptics: a real efficacy seems to be observed for coated polyglactin 910 with triclosan (Vicryl Plus®) (6). Diverse medicated instruments (as special scrub suits, antimicrobial-impregnated external ventricular catheters and antimicrobial-impregnated hernial prothesis) are still in sperimentation.

In conclusion, standardization of intraoperative procedure, considering utility of a multistep precautionary measure and the weight of these measures on post-operative stay of patients, may be an arm for control really post-operative infectious complications, according with control of sterilization's procedures and diffusion of dedicated device.

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