

Management of infection in the ITU

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Objectives

Having participated in this lecture, the attendees will be knowledgeable about the epidemiology of infecting pathogens and their resistance patterns in the intensive treatment units and therapeutic and preventive approaches for the infections.

Summary

Intensive treatment units (ITUs) have almost always higher rates of infections compared to the regular wards (i.e. 30-40% in ITU vs 5-10% in wards). This is mainly due to the severity of underlying diseases in patients admitted to these units, invasive procedures applied to these patients and widespread use of broad-spectrum antimicrobials. Nosocomial pneumonia is the by far most frequent infection encountered in this setting and followed by urinary tract and bloodstream infections. In almost all of these infections, use of a medical device is related to the pathogenesis of the developing infection such as mechanical respiratory ventilators and intubation catheters, indwelling urinary catheters and i.v. catheters. Diagnostic measures are usually complicated and unrewarding. Since the mortality rates due to infections are high, usually empirical broad-spectrum antimicrobials need to be promptly employed while waiting for the results from the microbiology laboratory. Once the results are available, the initial broad spectrum should be narrowed depending on the *in vitro* susceptibility of the present pathogen. Awareness of various risk factors leading to infection and applying adequate hand hygiene measures can decrease the burden of ITU-related infections.

Recommended reading

Vicent JL. Nosocomial infections in adult intensive-care units. *Lancet* 2003; 361: 2068–77.

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Kollef MH. Is antibiotic cycling the answer to preventing the emergence of bacterial resistance in the intensive care unit? *Clin Infect Dis* 2006;43:S82-8.

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Gastmeier P. Evidence-based infection control in the ICU (except catheters). *Curr Opin Crit Care* 2007; 13:557–62.

Chopra I, et al. Treatment of health-care-associated infections caused by Gram-negative bacteria: a consensus statement. *Lancet Infect Dis* 2008; 8: 133–9.

Dellinger PR, et al. Surviving Sepsis Campaign: International guidelines for management of severe sepsis and septic shock: 2008. *Crit Care Med* 2008; 36:296-327.