WHAT IS THE USE OF ROUTINE ENDOTRACHEAL SURVEILLANCE CULTURES IN VENTILATED PATIENTS?

As the most common nosocomial infection on intensive care units, there is no doubt that ventilator associated pneumonia (VAP) has a remarkable clinical and financial impact on health care systems these days. Thus, it is no wonder that various efforts are being made to improve the outcome of this type of infection. In many facilities this includes the routine diagnostic sampling of endotracheal aspirates (ETA) of patients who have not yet developed pneumonia. There are two aims of this practice: the first one is to assess the current colonization status of each individual patient. In the case that VAP is suspected at a later time the most appropriate antimicrobial treatment could then be applied immediately and chances on an improved clinical course of disease increase. The second aim of routine ETA sampling is to avoid the use of empiric broad spectrum antibiotic treatment which in consequence may lead to selection of highly resistant pathogens over time. But is this conclusion for diagnostic purpose. BAL became necessary for at least 48 hours. But on comparing the incidence of multi drug resistant pathogens over time. But is this treatment was adequate in 95% of the VAP cases. If the 1996 recommendations of the American Thoracic Society had been applied, only 68% (P = 0.005) of the patients would have received the appropriate therapy.

Hayon et al[^3] in contrast, found a substantially low concordance of routine microbiological sampling. They examined 125 consecutive episodes of VAP on a medical ICU. Prior respiratory secretion cultures were available for 102 of those. The organism ultimately responsible for VAP had been recovered in routine specimens in only 36 (35%) of the patients.

Similar findings are reported by Bouza et al.[^6] They obtained 1,626 respiratory surveillance samples from 356 patients on a heart surgery ICU over twelve months. Twenty-eight episodes of VAP (34.5 per 1,000 ventilation days) occurred. 29 episodes of purulent tracheobronchitis (31.1 per 1,000 ventilation days) occurred. However, only a single episode of VAP and one tracheobronchitis were effectively predicted by surveillance cultures.

In this issue, Nair et al.[^7] present another study which shows only limited use of surveillance ETA, too. They report suspected VAP in 27 of 177 surgical ICU patients who were ventilated for at least 48 hours. But on comparing surveillance ETA cultures to clinically indicated BAL cultures during infection, only six of eleven isolates (55%) showed an identical antimicrobial resistance pattern.

The latest infection control guidelines of the Healthcare Infection Control Practices Advisory Committee (HICPAC) of the Centers for Disease Control and Prevention (CDC) conclude that the current level of evidence on this topic does not allow recommending routine ETA culturing for all mechanically ventilated patients. So there is a definite need for additional well designed randomized controlled trials that deal with the question of routine ETA sampling. These studies should also take the incidence of multi drug resistant bacteria into account, as these pathogens are most likely not to be covered by an empiric antimicrobial therapy approach. Besides, standardized criteria and thresholds for the definition of nosocomial pneumonia should be used in studies for a better comparison of results. Further, more detailed data on the potential cost-effectiveness of ETA should also be assessed.

REFERENCES


options for this high-risk group of patients. The Coronary Artery Surgery Study (CASS) demonstrated that only 38% of medically high-risk patients had favorable reports from some investigators. The use of intra-aortic balloon counterpulsation (IABP) has increased, especially as part of routine practice. Preoperative use of IABP in high-risk patients is problematic because of limited long-term survival. As the proportion of high-risk patients for cardiac surgery increases, the decision to insert IABP may be individualized and best left to the treating physician as there are varying reports indicating differing outcomes.

Use of IABP is associated with certain complications, including peripheral ischemia, infection, and hematomatological derangements. The incidence of vascular complications reported in literature ranges from 8.7% to 20%. There are reports of in-hospital mortality being significantly lower in patients treated preoperatively with IABP compared with patients treated postoperatively. There is a clear relationship between duration of treatment and balloon-related complications. Independent risk factors for balloon-related complications are longer treatment time, acute myocardial infarction, age over 65 years and ejection fraction less than 30%. The benchmark registry included worldwide prospectively collected data from 203 hospitals on 16909 patients, who received IABP between June 1996 and August 2000. The registry reported overall IABP-related morbidity of 2.6% and IABP-related mortality of 0.05%. Female sex, old age and peripheral vascular disease were reported as independent predictors of major complications. Severity of coronary artery disease and left ventricular aneurysm surgery were found to be an independent risk factor. Many of these patients had unstable angina, hemodynamic instability and cardiac arrhythmias as indications of IABP insertion, which were also found to be independent risk factors for vascular complications. These factors reflect the severity of underlying cardiac dysfunction. Davoodi et al. have interesting observations. In their study involving over eight hundred high-risk cases the use of IABP was associated with prolonged hospital stay and independently predicted mortality at 1 month.

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