



Review Article

Catheter-associated infection during Pre and Post Hemodialysis of Kidney patients

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Abstract

Hemodialysis is a lifesaving treatment for the patient of end-stage renal disease. The process of hemodialysis is updating with the passage of time and gradually become safe and easier for the treatment of the patient. During the process of hemodialysis, some infectious diseases have been reported that cause during the withdrawal or insertion of blood from/ in the body. These infectious diseases include Diarrhea, Skin and soft tissue infection, intestinal dysbiosis, acute pneumonia, dental caries, Candida esophagitis, Candidiasis of lung, disseminated candidiasis, Aspergillus endophthalmitis, Blastomycosis and hepatitis occur in the patient of hemodialysis. All these diseases are referred to as catheter-associated infections. Catheter-related infections are usually considered as nosocomial infections. All the immune-compromised and immune-suppressed patients are exposed to these infections especially. Different microorganisms such as bacteria, fungi and viruses are involved in this contamination of bloodstream of patients. Among the bacteria and fungi, staphylococcus aureus and candida are the most common pathogens responsible for a high number of deaths in the patient of hemodialysis. It is reported that microorganisms attached to a catheter and reached the blood stream. There are many factors that affect the incidence of infection such as the structure of catheter, position of insertion of catheter and health status of the patients. The risk of infection will be decreased with the use of intravenous catheters instead of a central venous catheter. The process of hemodialysis will be safer if the catheter is used with some antibiotic ointments. The ointments are used on the outer surface of the catheter.

Key words: Hemodialysis infection, Bacterial peritonitis, Renal disease, Nosocomial infection

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INTRODUCTION

In 1950 at the University of Washington, Belding S developed a device that accesses the blood, using Teflon-plastic coated tube. This tube facilitated the repetition of blood in hemodialysis for the patient of blood uremia. A special shunt, Scribner was used with Teflon-plastic tube. This shunt was soon converted to arteriovenous fistulas. Similarly, hemodialysis saved the life of thousands of patients throughout the world who are at the end stage of renal disease (ESRD) (1). The hemodialysis is the life saving treatment for the patient of end stage renal disease. Similarly due the disruption of natural system of the body may lead to insertion of foreign microorganism to the body causing the contamination of blood stream. This disruption may increase the risk of infection in hemodialysis patient (2). the epidemiologic profile of patients on hemodialysis has changed, probably because of the higher lifespan and underlying chronic diseases of

these patients in whom the creation or repair of an autogenous fistula or graft may be risky or impossible. For these reasons, the use of permanent central venous catheters for hemodialysis (HD) has increased worldwide. Moreover, the dependence upon catheters is not only limited to elderly patients with extensive comorbidities, but they are also inserted in non-diabetic young patients (3). Liver disease related to hepatitis C virus (HCV) infection is a significant cause of morbidity and mortality in hemodialysis (HD) patients and kidney transplant recipients. In developed countries, the prevalence of anti-HCV seropositivity among patients on maintenance HD ranges between 5% and 60%. Patients on HD are at high risk for HCV, with frequency of infection several times higher than that in non-uremic patients. The spread of HCV in HD units is declining, but the prevalence of HCV in HD patients remains high (4). Hepatitis C virus (HCV)

