**40 NEBULIZED AMPHOTERICIN B PROPHYLAXIS IN IMMUNOCOMPROMISED PATIENTS TO PREVENT INVASIVE PULMONARY ASPERGILLOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Background** Invasive pulmonary aspergillosis (IPA) is one of the major contributing factors increasing morbidity and mortality in immunocompromized patients. Nebulized amphotericin B (AMB) has been studied as a method for prevention of IPA. However, most published studies lacked a consistent conclusion. This systematic review evaluated the efficacy and safety of prophylactic inhalation of AMB for the prevention of IPA in selected immunocompromized patients (cancer/chemotherapy, solid organ transplant lung/heart).

**Methods** An electronic database search was conducted including published and unpublished papers in MEDLINE and Cochrane databases together with international conference proceedings and bibliographies of major articles. Randomized control trials and observational studies (comparative/non-comparative) comparing nebulized AMB versus placebo were included. Two independent reviewers assessed and extracted the data from included studies.

**Results** A total of 37 studies were included in the qualitative synthesis, of which 17 were analyzed quantitatively in the meta-analysis. Incidence rates of IPA and IPA-related mortality were significantly lower with the use of prophylaxis nebulized AMB, with risk ratio (RR) 0.38 (95% CI 0.28–0.51, p<0.00001) and RR 0.54 (95% CI 0.33–0.91, p=0.02), respectively. The rates of side effects were 25% and 40% in comparative and non-comparative studies. Significant side effects promoting stopping nebulization occurred in 6.6% and 4.8%, respectively.

**Conclusion** This analysis found a significant protective effect of nebulized AMB in preventing IPA and IPA-related mortality in immunocompromized patients.

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**41 ASSOCIATION BETWEEN POSTOPERATIVE INFECTION AND BLOOD TRANSFUSIONS IN CARDIAC SURGERY IN KING FAISAL CARDIAC CENTER, 2016 TO 2019**

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**Background** Blood transfusion is a commonly used therapy in cardiac surgery, whether it is given during the surgery or in the intensive care unit. Because of this alarming number, it is necessary to evaluate the risk and complications that patients are exposed to once transfusion therapy is applied. Postoperative infection in cardiac surgery patients has been linked to patient outcome. Nosocomial pneumonia, surgical site infection, mediastinitis, bacteremia, and sepsis are common infectious processes affecting the outcome. In the King Faisal Cardiac Center (KFCC), the liberal use of blood transfusions has been raising questions on the outcomes of patients. In an attempt to decrease the use of transfusions, it is essential to understand the risk and complications associated with them. Postoperative infection is the main complication that causes most concern. We aimed to determine the effects of blood transfusion on postoperative infection in cardiac surgery patients and to assess the benefits or negatives of our large transfusion rate at the KFCC from January 2017 to January 2019.

**Methods** We did a retrospective cohort study of all patients aged older than 18 years who underwent cardiac surgery at KFCC from January 2017 to January 2019. Data were analyzed using the statistical package IBM SPSS 22. Categorical variables were reported as percentages, while numerical variables were reported as means and medians. P values less than 0.05 were considered significant.

**Results** 197 was the sample size. Mean age was 57.64 years and body-mass index (BMI) was 28.91. 93.4% of patients had blood transfused and 31.98% had postoperative infection. Comparing transfused and non-transfused patients, hemoglobin (Hb) on discharge values and postoperative infection were similar; only preoperative Hb was significantly different (p=0.0053). Comparing patients receiving 1–2 units of red blood cells (RBCs; 48%) and more than 2 units of RBCs (52%), there was also no significant difference in postoperative infection. Patients with postoperative infection had a mean HbA1c of 8.16, while non-infected patients had a mean HbA1c of 7.33.

**Conclusion** Blood transfusion was not significantly linked to postoperative infection and discharge hemoglobin. The findings show us that giving blood has not increased or decreased the risk of infection. Therefore, it is safe to say that, regarding postoperative infection and discharge Hb, we are transfusing too much blood and using up resources for outcomes that could have been achieved otherwise. Although our curiosity for the high infection rate has still not been answered completely, we assume HbA1c plays a major role because of the high prevalence of diabetes, and especially uncontrolled diabetest, in our population.

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**42 THE EFFECT OF STATIN TREATMENT ON GLYCEMIC PROFILE**

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**Background** Patients who are at risk for atherosclerotic cardiovascular diseases will start statin therapy as primary prevention to lower the low-density lipoprotein (LDL) level. However, the use of statins may induce new-onset diabetes and increase the HbA1c level. A meta-analysis of nine randomized clinical trials concluded that statins cause a modest increase in HbA1c levels by 0.12%. Different statins exert different effects. A cohort study aimed to examine the effect of different statins on the risk of new-onset diabetes, and concluded that atorvastatin, rosuvastatin, and simvastatin were associated with significantly higher risks of incident diabetes compared with pravastatin. Additionally, a randomized trial assessing the effect of high-dose statins on fasting plasma glucose (FPG) levels and HbA1c levels compared atorvastatin 80 mg with rosuvastatin 40 mg and found that atorvastatin 80 mg was associated with a significant increase in HbA1c level by 4 units. This study aimed to assess the
effect of statins on HbA1c levels and to determine which statin exerts most of the effect.

Methods This was a subgroup analysis of a retrospective chart review study including patients who were admitted to King Abdulaziz Cardiac Center, National Guard Hospital in Riyadh, KSA, during January 2015 until September 2017. A total of 500 cases represent the sample size of the study. The inclusion criteria included adults older than 18 years who used either rosuvastatin or atorvastatin, while the exclusion criteria included patients on simvastatin, and patients who had a contraindication for high-intensity statins or who cannot tolerate them.

Results Our results showed the opposite to previous studies. The use of statins was not associated with a significant increase in HbA1c levels in patients with diabetes (p=0.870). This could be because of good glycemic control in these patients because they had already been diagnosed as diabetic patients and were on antidiabetic medications. The impact of statins on HbA1c level in non-diabetic patients demonstrated an increased level of HbA1c (p=0.004). We identified which type of statin and which dose exerted most of the effect. Atorvastatin 80 mg and rosuvastatin 20 mg were associated with a higher rate of HbA1c disturbances in patients with diabetes only (p=0.000 and p=0.022, respectively).

Conclusion This study along with previous studies showed that statins significantly affect the glycemic profile in non-diabetic patients only and showed no effect in diabetic population. The effect was significant only with high intensity statins. Therefore, careful monitoring in non-diabetic statin users is warranted.

Background Central line-associated bloodstream infections (CLABSI) create a huge burden of cost on healthcare organizations. Reducing the incidence of CLABSI will not only provide better healthcare and safety to patients but will also reduce the costs associated with additional days of stay. Central venous catheters are used in the healthcare system for a variety of indications, and bloodstream infections are one of the major complications. Central line bundles are a group of guidelines created to minimize and prevent infections acquired during administration. The purpose of our research was to assess the knowledge of central line bundles among healthcare workers in intensive care units.

Methods This cross-sectional study was done in King Abdulaziz Medical City in Riyadh and included 171 nurses and 41 physicians working in the three intensive care units (surgical, medical, cardiac). Participants’ awareness of central line bundles was assessed using a questionnaire that included three sections: demographics, knowledge, and practice.

Results The vast majority of the healthcare workers answered questions correctly regarding knowledge of CLABSI prevention (wearing maximal barrier precautions, washing hands, using chlorhexidine at insertion site, documenting the procedures, etc). The average knowledge score among participants was 82%. A major factor determining knowledge of central line bundles is training. 60% of the participants had received central line training. Participants who received CLABSI bundle achieved a high mean score of 84%, whereas this score was lower in those who had not received training (78%).

Conclusion Our results suggest that receiving CLABSI training is associated with better knowledge and lower complications rate. Educational interventions should be used to address the gaps regarding knowledge and practice regarding the prevention of CLABSI and to ensure that healthcare workers use evidence-based prevention interventions.