Introduction

Rheumatic heart disease remains a major problem in developing countries. Most often valve replacement is needed in case where the native valves are not suitable for either balloon interventional procedure or surgical repair *(Reddy et al., 1994).*

Despite the advances in the design, material, selection and manufacturing of prosthetic valves, the currently available models still are less than ideal and none of them approaches the normal human valves in either hemodynamic function or long term freedom from valve related complication *(Zeinen et al., 1990).*

Despite the improvement in the design of the anticoagulation, thrombosis is a well-recognized complication of prosthetic heart valves and is associated with substantial morbidity and mortality, actually mechanical valve obstruction is currently the main reason of mechanical valve re-operation *(Edmunds 1987).*

In recent series, valve thrombosis was the most common prosthesis related complication found at the autopsy, which is higher in mechanical valves 23% comparing the bioprosthetic valves 11% *(Zeinen et al., 1990).*

Prosthetic valve thrombosis is a life threatening complication with dramatic clinical presentation and rapid deterioration. The outcome is mostly fatal without intervention. However, the emergency operation

with either valve replacement or thrombectomy with debridement was considered the treatment of choice for acute prosthetic valve thrombosis, unfortunately, the operation in this situation associated with high mortality, which is ranging from 8 – 20 percent for urgent cases to 37.5%- 54.5% for emergency cases *(Husbye et al., 1983)*.

Thrombolytic Therapy:

Hence the pathogenesis of acute thrombosis in acute myocardial infarction and pulmonary embolism is the same of valve thrombosis, thrombolytic therapy was used as another modality in the treatment of stuck valves, which was initiated by Luluanga at 1971, when he used streptokinase in the treatment of tricuspid valve thrombosis *(Luluanga et al., 1971)*.

Three years later Baille and his colleagues used thrombolytic therapy in the treatment of left sided stuck valves *(Baille et al., 1974)*, since this time tell know, thrombolytic therapy was used in management of stuck valves with different success rate *(Agaewal et al., 1997)*.

Despite the agreement about thrombolytic safety in the treatment of prosthetic valve thrombosis, no special regimen is recommended and the percentage of re-thrombosis still undefined *(Yaron et al., 2000)*.

Prosthetic valve thrombosis is the most common prosthetic related complication found at the autopsy, which is higher in mechanical valves (23%) comparing the bioporthetic valves (11%) *(Zeinen et al., 1994)*.

Prosthetic valve thrombosis is a life threatening complication with a dramatic clinical presentation and rapid deterioration, the outcome is mostly fatal without intervention *(Reddy et al, 1994)*.

Inadequate level of anticoagulation is the most important factor involved in the pathogenesis of prosthetic valve thrombosis, adding to it many other factors including, the site and type of the prosthesis, the hypercoagulable state, the cardiac morphology and function *(Hering et al., 2001)*.

Surgical treatment with either valve replacement or thrombectomy with debridement was considered the treatment of choice for acute prosthetic valve thrombosis, however, operation in this situation is technically demanding, with 37% to 55% mortality risk in emergency situation *(Deviri et al., 1991)*.

Because the pathogenesis of acute thrombosis in acute myocardial infarction and pulmonary embolism is the same of valve thrombosis, thrombolytic therapy was tried as another modality in the treatment of stuck valves, which was initiated by Luluanga at 1971, when he used streptokinase in the treatment of tricuspid valve thrombosis *(Luluanga et al, 1971)*.

Thrombolytic therapy has been accepted for routine treatment of tricuspid valve prosthetic occlusions, the concern for potential risk of systemic embolization has limited its use in left sided prosthetic valve thrombotic occlusion *(Roudaut et al, 1992)*.

Thrombolytic therapy has been tried in acute left-sided prosthetic valve thrombosis as an alternative to emergency operation in case of critical clinical presentation, and when surgery is contraindicated *(Witchitz et al, 1980)*. After that, thrombolytic therapy started to have an acceptance to be used in more stable patients as in NYHA class III, and IV *(Ledain et al, 1986; Roudaut et al, 1992 and Silber et al, 1993)*.

Many regimen of thrombolytic therapy was tried in acute prosthetic valve thrombosis including, rapid infusion of 1.500.000 U SK within 60-90 min, accelerated infusion of 500,000 U over 20 min followed by 1,500,000 U SK over 60 min, delayed infusion of 500,000 U over 20 min followed by 1,500,000 over 6 to 10 hours, and slow infusion of 250,000 over 20-30 min followed by 100,000 U/h up to 72 hours. Despite of the presence of many protocols, no recommended regimen was reported *(Roudaut et al, 2003; ACC/ AHA guide line 2006)*.

Surgical management:

Operation with either valve replacement or thrombectomy with debridement was considered the treatment of choice for acute PMVT, however operation in this situation is most demanding technically, often performed under urgent circumstances regardless of all the re-operation-related risks with operative mortality of 19.6% for repeat mitral valve replacement. Patients in NYHA functional class III and IV had a mortality risk up to 41% *(Alveraz-Ayuso et al, 1982)* and that for emergency procedures was 37% to 55% *(Deviri et al., 1991).*

In some cases surgical valve debridement is occasionally sufficient and may be associated with a lower operative mortality *(Montero 1989)*, although the rate of re-thrombosis may be significantly higher *(Martinell, 1991).*