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The outcome of percutaneous atrial septal defect and patent foramen ovale closure, 15 years single center experience

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Background: King et al., first time described percutaneous trans-catheter closure in 1976. After that, with time after Pediatric population, catheter interventions for atrial septal defect (ASD) have been adapted for adult population. The most useful clinical benefits of this procedure are the significant improvement of symptoms and routine life activities without major cardiac surgery.

Objectives: This study aimed to assess a single institutional experience of the ASD closure and patent foramen ovale repair early and late outcome after percutaneous transcatheter closure.

Methods: A retrospective observational cohort study designed for percutaneous PFO/ASD closure patients at a single center. We enrolled study group from February 2000 to June 2015. We collected data from patient's electronic folders. In entire population, N=126 (80%) and N=25 (20%) of the patients underwent PFO and ASD closure, respectively.

Results: Our total population consisted of with 149 patients mean age 50.5±11 years underwent percutaneous PFO and ASD closure. The mean device size was 19.3±6.2 mm for ASD patients and 24.6±2.6 mm for PFO patients. The mean procedural and fluoroscopy times were 21.2±3.5 and 3.8±2.2 minutes for ASD closure and 12.4±3.2 and 3.1±1.2 minutes for PFO closure, respectively. Device deployment rate was 100% successful. Transesophageal echocardiogram was used in 65% of patients during device implantation. Post-procedural, 92% of patients were discharged home without any complications. N=2 (1.3%), N=1 (0.7%), and N=1 (0.7%) patients observed with atrial fibrillation, infection and allergic reaction, respectively.

Conclusion: Trans-catheter percutaneous PFO and ASD can be done in adults safely with relatively less procedural and post-procedural complications.

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Up-regulation of CD40/CD40L system in rheumatic mitral stenosis with or without atrial fibrillation

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Platelet activation occurs in peripheral blood of patients with rheumatic mitral stenosis (MS) and atrial fibrillation (AF) and could be related to abnormal thrombogenesis. The CD40/CD40 ligand (CD40L) which reflects platelet activation, mediate a central role in thrombotic diseases. However, the role of CD40/CD40L system in rheumatic MS with or without AF remains unclear. Expressions of CD40 on monocytes and CD40L on platelets were determined by whole blood flow cytometry and serum levels of soluble CD40L were measured by enzyme-linked immunosorbent assay in group 1 (19 patients with MS) and group 2 (20 patients with MS and AF) compared to group 3 (10 controls). Patients with groups 1 and 2 had a significant increase in expression of CD40 on monocytes (P1 and P2 = 0.000) and serum levels of sCD40L (P1=0.014 and P2=0.033, respectively), but non-significant increase in expression of CD40L on platelets (P1=0.109 and P2=0.060, respectively) as compared to controls. There were no significant difference in all the parameters in group 1 compared to group 2. Correlation analysis demonstrated that there was a significant direct relationship between the severity of MS and serum levels of sCD40L (r=-0.469, p=0.043). In conclusion, rheumatic MS patients with or without AF had up-regulation of the CD40/CD40L system as well as elevated sCD40L levels. The levels of sCD40L had a significantly direct relationship with the severity of MS and it was the stenotic mitral valve, not AF that had a significant impact on platelet activation.

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