score. Only LMCA stenting was done in 22 (44%) patients, LMCA TO LAD stenting was done in 22 and LMCA TO LCX stenting was done in 6 (12%) patients. DES were used in 35 (70%) cases while BMS were used in 15 (30%). Mean stent diameter and length were 3.53 ± 0.41 mm and 19.27 ± 7.89 mm, respectively. Out of 20% patients who underwent check CAG, 6% had significant ISR for which they underwent TLR. 8% mortality was observed.

**Conclusion:** LMCA angioplasty with stent implantation is a safe procedure in selected patients.

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**Intracoronary nicorandil mixed with contrast through a thrombus aspiration catheter after initial failed aspiration in the infarct related artery vessel reduces no flow/slow flow during primary angioplasty with late presentation**

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**Aims:** The exact cause and management of no flow/slow flow remains elusive till date and the incidence of no flow increases as the duration of door to balloon time increases in primary angioplasty. One of the main reasons for this complication is clot embolization to distal vessels due to too much manipulation of an organized clot by catheter and balloons. If after one or two attempts of thrombectomy the flow in the culprit vessel does not improve, then we try to place the aspiration catheter as distally as possible and infuse 1–2 mg of nicorandil solution diluted with 50% of contrast solution. This modification has two advantages, the distal vessel is well delineated, the extent of the lesion can be assessed well and the whole clot can be entrapped by appropriate sized stent establishing Thrombolysis in myocardial infarction (TIMI) III flow. Secondly locally delivered high concentration of nicorandil in the infarct vessel reduces coronary spasm and protects from ischemic reperfusion injury when the vessel opens up.

**Methods and results:** Between March 2013 and March 2015, 30 STEMI patients with thrombotic total occlusion of arteries during primary angioplasty were retrospectively analyzed. The results of using this novel method of infusing intracoronary nicorandil in the distal culprit vessel through a coronary thrombus aspiration catheter (number of patients 16) were compared to those patients without the use of this method (number of patients 14). Mean age of presentation was 57 ± 8 years, more than half of the patients were males (60%) and the majority was anterior wall myocardial infarction (50%). The culprit vessel was left anterior descending artery LAD in the majority of cases (50%) right coronary artery RCA (30%) and the rest (20%) were left circumflex artery. The average window period of presentation was 10 ± 2 h. 14 patients were in cardiogenic shock and intra aortic balloon pump (IABP) was used in all these patients. In all MI patients, thrombus aspiration catheter was used, and Gp2b3a inhibitors were used in 10 cases. In 12 out of 16 patients, TIMI III flow and good myocardial blush were achieved by using this innovative approach. Repeated thrombectomy by aspiration catheters or predilatation of the thrombotic lesions yielded adequate flow and good myocardial blush in only 5 out of 14 cases (p = 0.03). In the first group, where intracoronary nicorandil was given, 2 out of 16 patients succumbed, while in other group 4 out of 14 patients died at the end of 30 days (p = 0.27).

**Conclusions:** Our initial analysis revealed that use of this novel concept of infusing intracoronary nicorandil mixed with contrast beyond the totally occluded culprit vessels in acute MI patients helps to achieve better myocardial perfusion during primary angioplasty with improved survival outcomes. However, larger scale prospective multifactorial adjusted, randomized controlled studies are required to confirm our preliminary findings.

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**Totally occluded SVG and radial artery grafts: Is there a subset where angioplasty and stenting would help?**

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**Introduction:** Angioplasty and stenting (PCI) gives good results for diseased Saphenous Vein Grafts (SVG) but is disappointing in occluded grafts, primarily owing to “clot clogging of the tributary-lacking conduits”. In fact, PCI is considered a contraindication in totally occluded SVGs. However, recently occluded grafts could have a better chance of good result with PCI; we report a small series of such cases.

**Case report:** Four patients, all male, who underwent CABG surgery more than a decade ago (10.5–19.5 years) presenting with Non-ST elevation Myocardial Infarction (NSTEMI). Two patients underwent CAG elsewhere and were referred here for SVG angioplasty for critical 90% stenosis in the proximal graft to OM and RCA, respectively. Two others underwent CAG in our center and had critical proximal graft stenosis (one SVG to OM and the other was radial artery graft to OM).

All underwent transfemoral procedure. Initial angiography shots revealed proximally occluded grafts. The time interval between CAG and admission for PCI was 3–14 days. In view of continuing anginal symptoms, absence of other disease to account for the symptoms, awareness of prior anatomy of SVG and disease, and quite short history after possible total occlusion, it was decided to go ahead with PCI of the occluded grafts. Minimally invasive “primary PCI-like” technique was used in all and was successful and uncomplicated. Drug Eluting Stents were used. Slow-flow and no-flow were not encountered in any. Post PCI, patients had good symptomatic relief.

**Conclusion:** Even though PCI is considered a contraindication for totally occluded SVGs, there is a subset of recently occluded grafts, which respond to PCI with good outcomes. Use of “primary PCI-like” techniques helps in preventing or minimizing slow-flow and no-flow.

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**Use of 5 F vs. 6 F guide catheter by left transradial approach for coronary intervention in diabetic population**

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**Aims:** Transradial approach is more than a default technique and access of choice for coronary procedures because of patient comfort and less access site bleeding. Left radial approach is better than right radial approach in terms of catheter manipulation and more patient comfort. Operator’s “learning curve” is a factor to achieve this technical superiority. Guide catheter size and type play an important role in achieving the procedural success in radial approach. The aim of this study is to compare 5 F vs. 6 F guide catheter in left radial approach for coronary intervention (PCI) in diabetic population performed by a single operator to avoid operator bias.

**Methods and results:** This is a single center and exclusively single operator randomized study including diabetic patients more than
18 years old requiring PCI. Study period was since February 2012 to February 2013. Primary PCI were excluded from this study. The patients were randomized to 5 F and 6 F guide catheter group. Primary endpoint of this study for CAG was procedural success and secondary endpoint was amount of contrast volume, use of “buddy wiring” and predischARGE MACE and all cause mortality. Total 400 patients for PCI were enrolled and performed by single operator. Total study population were divided into 5 F arm (n = 200) and 6 F arm (n = 200). Procedural success was 97.3% vs. 98.5% (p = 0.06) in 5 F vs. 6 F arm. Procedural failure of patients in 5 F group was because of its crossover to 6 F guide catheter for use of thrombus extraction catheter. 3 of 6 F group switched over to 5 F group because of extremely narrowed radial artery. Though the lesion characteristics, number of vessels and number of stents in both groups were not significantly different, amount of contrast volume used for PCI was significantly lower in 5 F group (p = 0.006) and prevalence of “buddy wiring” to perform the PCI was significantly higher in 5 F group (p = 0.001). PredischARGE MACE and all cause mortality were not statistically different in both groups. 

**Conclusions:** PCI by left radial approach is feasible in diabetic population. 5 F guide catheter is a safer alternative to 6 F guide catheter in terms of procedural success and lower amount of contrast volume. Of course, more number of “buddy wiring” can be expected for successful PCI by 5 F guide catheter.

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**Transcatheter closure of ruptured sinus of Valsalva aneurysm**


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**Background:** Ruptured sinus of Valsalva aneurysm (RSVA) is a rare cardiac shunt lesion. Although RSVA is traditionally repaired surgically, there are several case reports and few series of successful transcatheter closure (TCC) too. We report the largest series of TCC of RSVA.

**Aim:** To assess immediate outcome of TCC of RSVA using the Amplatzer or Lifetech devices.

**Methods and material:** Thirty-three patients (11 females, 22 males) aged 17–52 years (mean 31.6 years) with RSVA were selected for TCC after excluding infective endocarditis, coexisting ventricular septal defect (VSD) and significant aortic regurgitation (AR) requiring surgery. Most (19/33) were in NYHA class III or IV. Three had previous cardiac surgeries (CABG, VSD repair, RSVA patch closure). Associated defects were bicuspid aortic valve in 3, trilval pre-existing AR in 6, mild AR in 2, coarctation of aorta in 2 and large ostium secundum ASD in 2. Echocardiography revealed RSVA from right coronary sinus to RA in 9 and right ventricular outflow in 6, and from non-coronary sinus to RA in 16 and RV inflow in 2. At cardiac catheterization, the defect size was 4–14 mm (mean 8.38 ± 2.48) at aortic end, as measured by online transesophageal echocardiography or angiography. In all patients, defect was closed from venous side forming an arterio-venous loop. The devices used were Amplatzer duct occluder (ADO) in 31 (size range 8/6 mm to 16/14 mm), Amplatzer septal occluder (22 mm) in 1, and Lifetech duct occluder (18/16 mm) in 1.

**Results:** The procedure was successful in 28 out of 33 (84%). Of these 28, at 24 h of procedure, 20 had complete closure, 7 had small residual shunt (RS) and 1 had moderate RS with self-abating hemolysis. Trivial to one-grade increase procedure-related AR occurred in 7. Out of 5 failures that were repaired surgically, 2 had deployment failure, 2 devices embolized to pulmonary artery. 1 had severe RS causing hemolysis.

**Conclusion:** In appropriately selected patients with ruptured SOVA, TCC is a safe and effective alternative to surgery with encouraging immediate outcomes. A long-term follow-up is desirable.

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**A vital supply by Vieussens ring**

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**Introduction:** The human heart is in most cases vascularized by two coronary arteries, the right and the left and rarely by Supernumerary coronary artery, which arises independently from the right aortic sinus. Awareness of the presence and distribution of supernumerary coronary arteries is significant for proper interpretation of coronary angiograms and coronary revascularization.

**Case report:** A 45-year-old diabetic female came with complaints of recent onset exertional angina. Her ECG was suggestive of old anterior wall myocardial infarction and Tread Mill test was positive. Her coronary angiogram revealed proximal left anterior...