

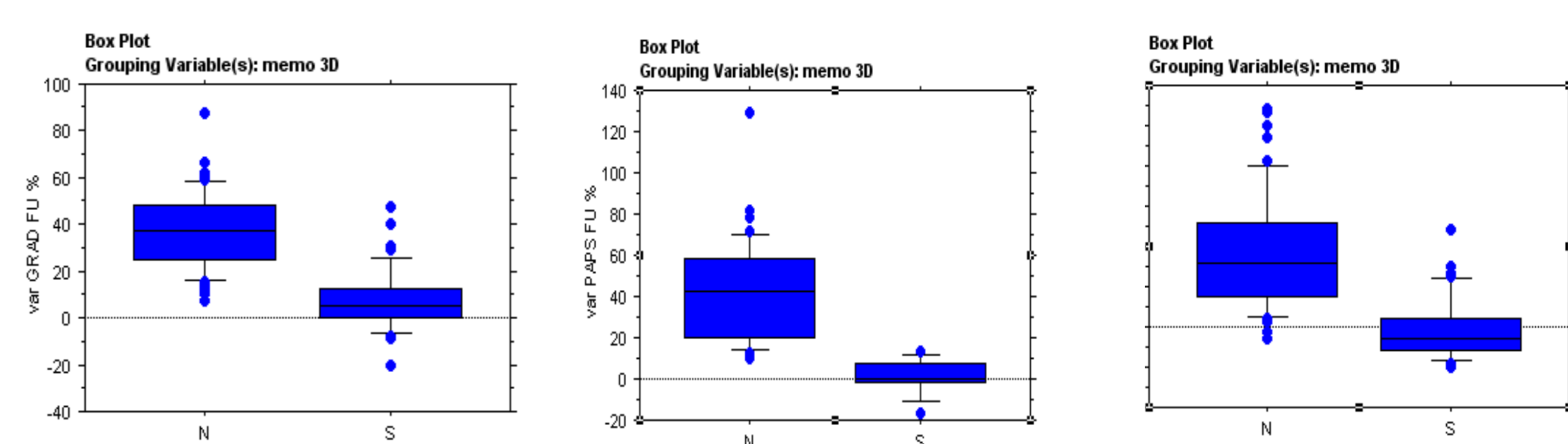
CLINICAL AND ECHOCARDIOGRAPHIC OUTCOMES AT REST AND UNDER EXERCISE AFTER MITRAL VALVE ANNULOPLASTY FOR ISCHEMIC MITRAL REGURGITATION: IMPACT OF DIFFERENT RINGS.

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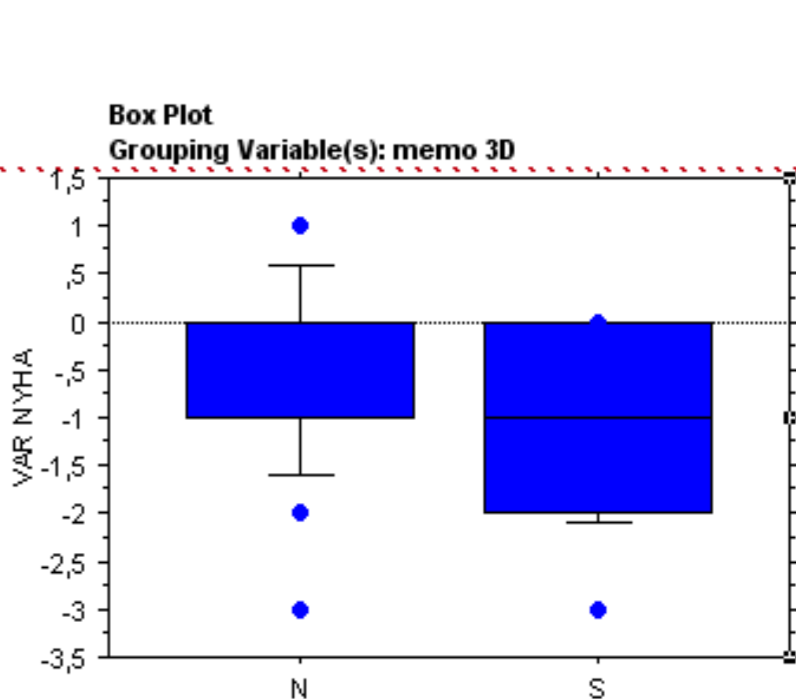
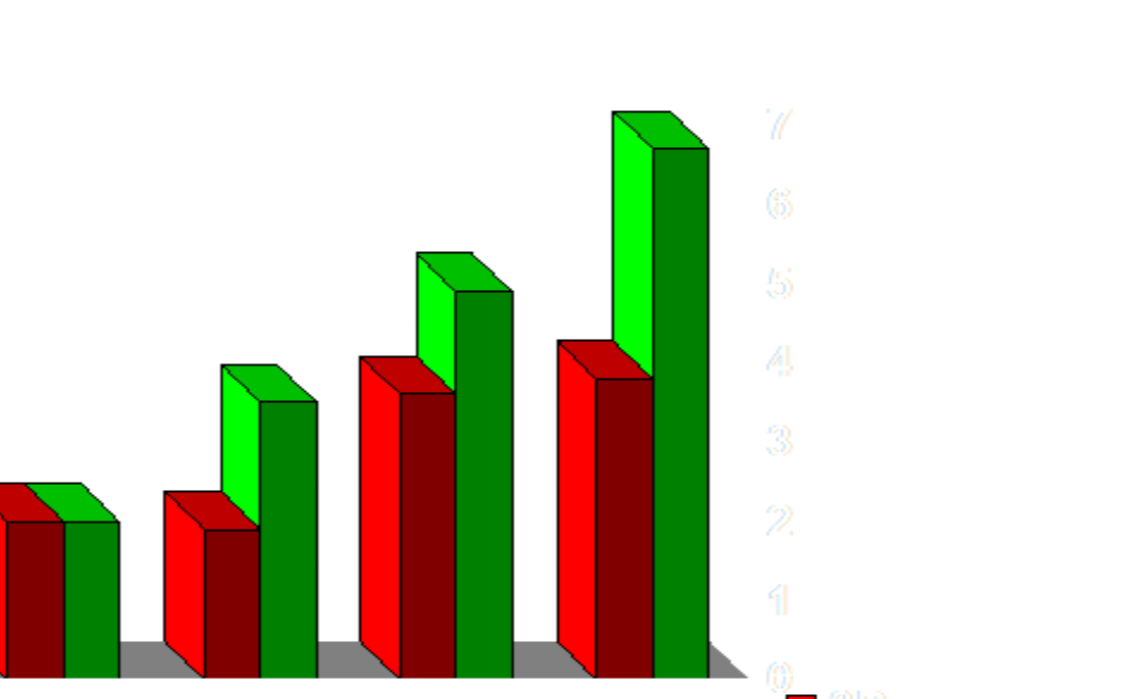
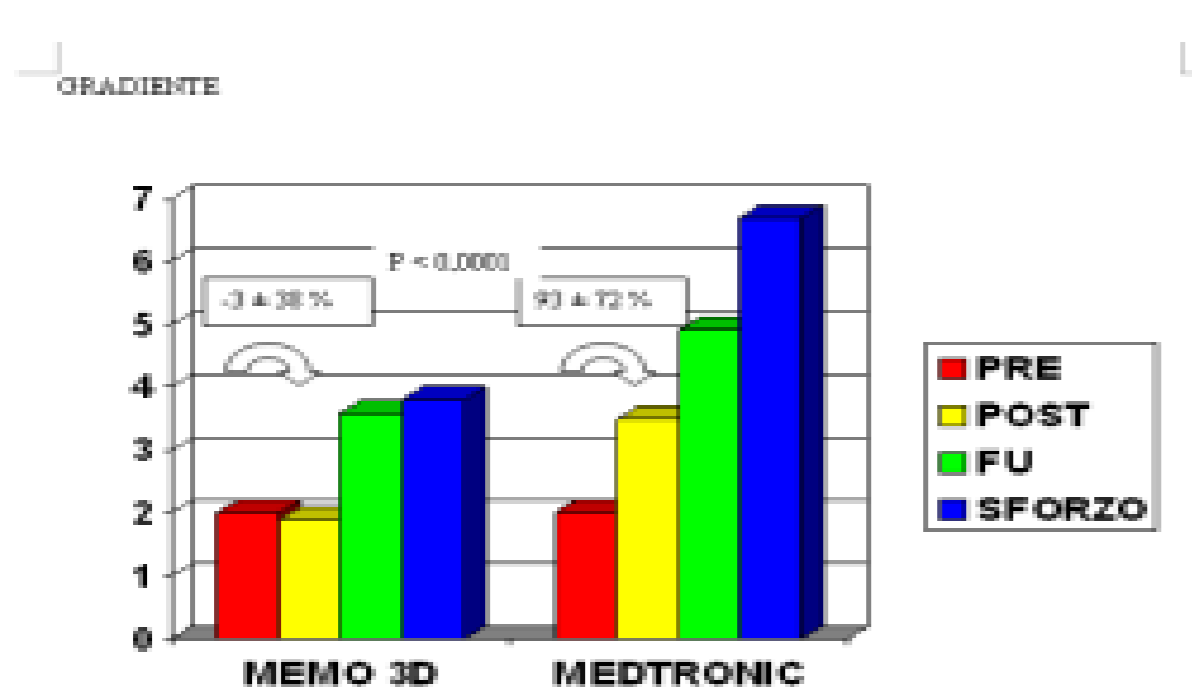
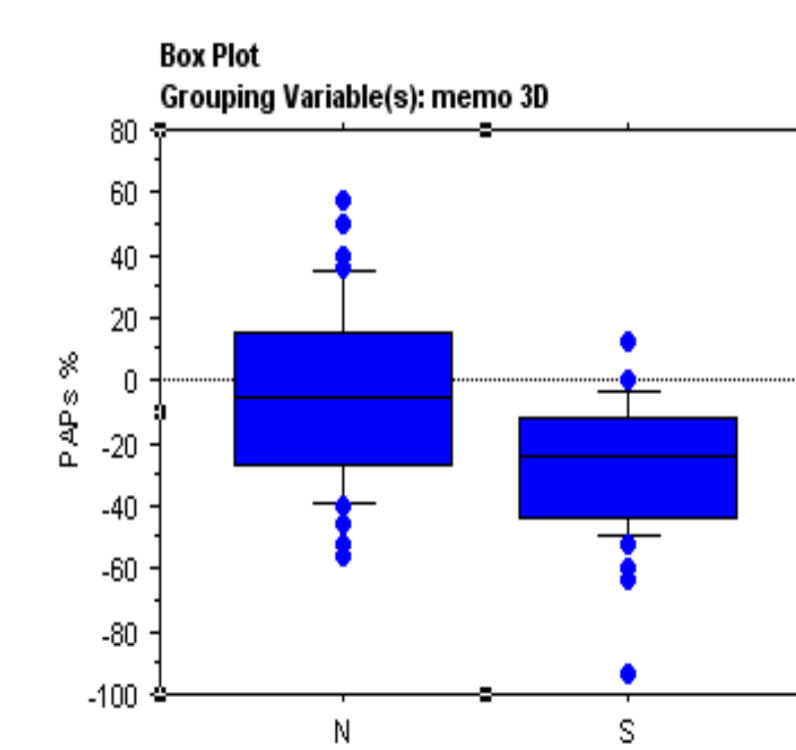
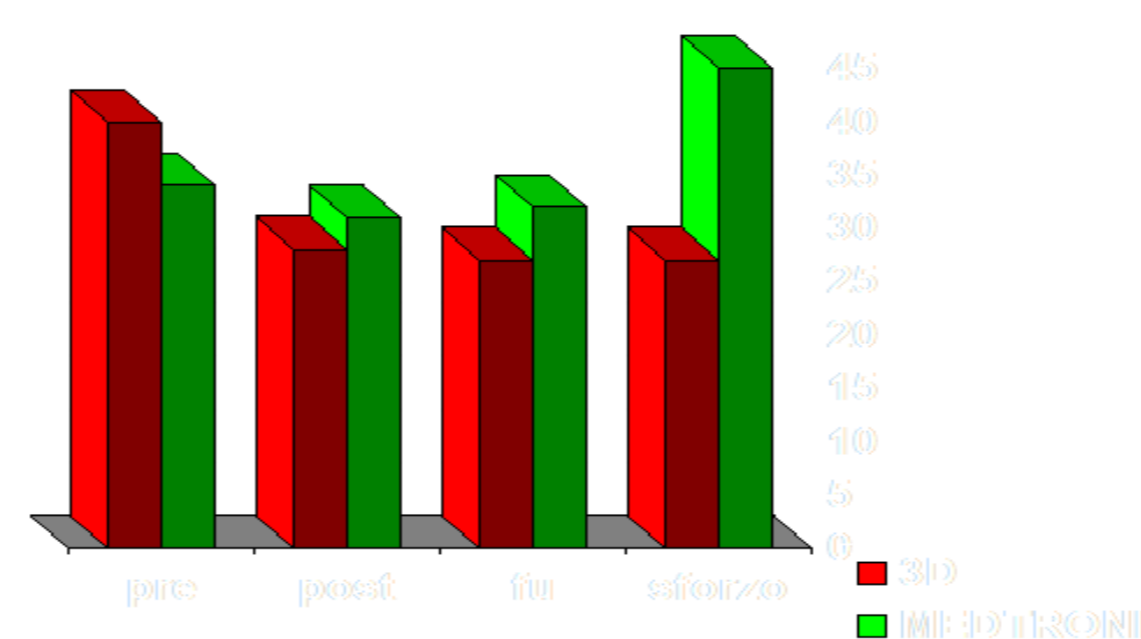
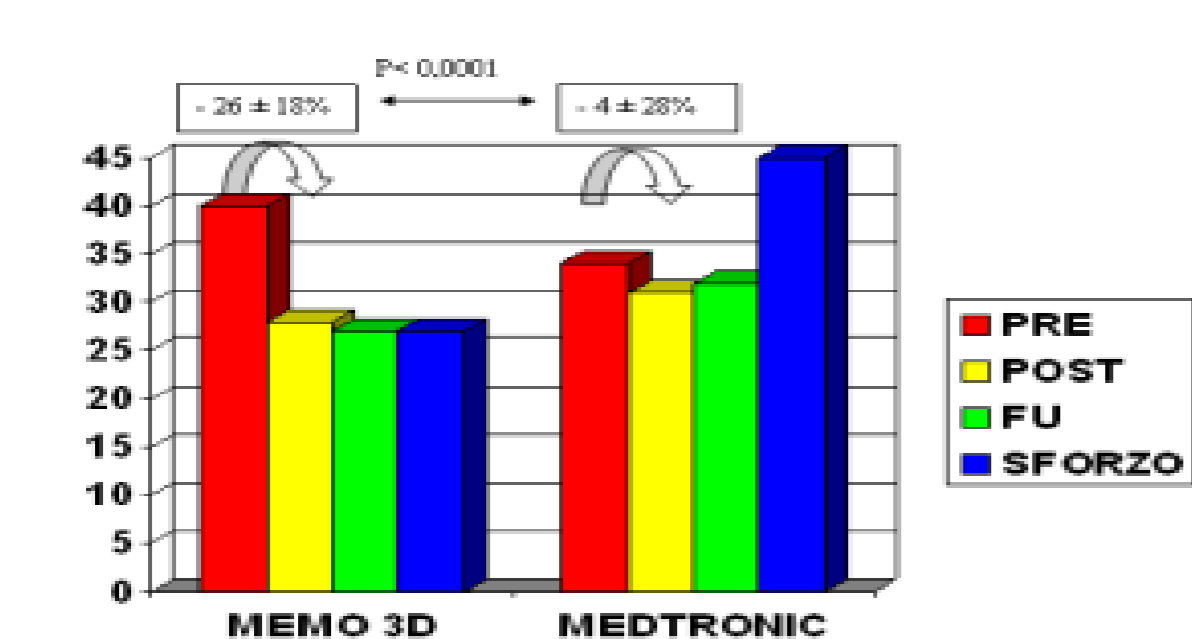
Objectives: Although, undersized annuloplasty is recommended in patients presenting for CABG with moderate to severe ischemic mitral regurgitation (IMR) uncertainty remains on the ideal ring type to be used. Different types of prosthetic rings have been proposed. Aim of our study is to compare the impact of different rigid or semirigid rings on echocardiographic and clinical outcomes, at rest and under exercise.

Methods: From January 2008 to December 2013, 93 patients with severe IMR who had undergone mitral valve annuloplasty (MVA) in our institutions were prospectively enrolled. The population was divided in two groups, the first (Group A, 44 patients) underwent using Memo 3D (Sorin Group), the second (Group B, 49 patients) was treated with a rigid saddle shaped ring (Profile 3D, Medtronic or Rigid Saddle shape, St Jude). No statistically significant differences were found between two groups in baseline characteristics, except for systolic pulmonary artery pressure being significantly higher in the Memo3D group (PAPs, $p = 0.003$).

	TOT (n 93)	Sorin MEMO 3 D (n 44)	Rigid saddle shape (n 49)	P value
Age (years)	65 ± 8	64 ± 9	66 ± 8	NS
LVEDD (mm)	56,4 ± 7	56,2 ± 9	56,5 ± 7	NS
LVEDV (ml)	116 ± 32	117 ± 36	115 ± 28	NS
EF (%)	44 ± 9	44 ± 7	44 ± 10	NS
PAPs (mmHg)	37 ± 11	40 ± 12	34 ± 8	0,003
Mean gradient (mmHg)	2 ± 0,5	2 ± 0,4	2 ± 0,6	NS
Tenting Area (mm)	2,2 ± 0,4	2,2 ± 0,4	2,1 ± 0,4	NS
Coaptation Depth (mm)	8 ± 1,6	8,5 ± 1,6	8 ± 1,5	NS
Tenting Volume (ml)	8 ± 1,4	7,7 ± 1,4	7,9 ± 1,4	NS



Results: Hospital stay was 9 ± 3 and 10 ± 6 days in two groups respectively. No differences between 2 groups were found on postoperative complications and in-hospital deaths. We found statistically significant differences between the two study groups in post-operative NYHA functional class ($p=0.003$), end-diastolic volume ($p=0.01$) and post-operative PAPs ($p = 0.03$), in favor of Memo3D group. At follow-up (mean, 34 ± 18 months), the increasing change of PAPs under stress compared to rest, was $1 \pm 8\%$ for Group A and $42 \pm 24\%$ for Group B ($p < 0.0001$). The increasing variation of mean transmitral gradient under stress, compared to rest, was $7 \pm 13\%$ for Group A and $38 \pm 16\%$ for Group B ($p < 0.0001$). Memo3D group patients present lower coaptation depth and posterior angle, but no difference was found regarding tenting volume and anterior angle.



Conclusions: Undersized anuloplasty ring proves to be an effective technique for the treatment of IMR. In our study Memo3D semirigid annuloplasty ring is related with lower PAPs and mean transvalvular gradient at rest and under stress compared with rigid saddle shape rings. Furthermore better tenting parameters were observed in the Memo3D group that led to better clinical outcomes and lower recurrency of mitral regurgitation. These data suggest that a semirigid ring should be preferred to rigid saddle shaped rings when treating IMR.