



# TRANSCATHETER AORTIC VALVE REPLACEMENT IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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## OBJECTIVES

Transcatheter aortic valve replacement (TAVR) is an established percutaneous technique for the management of patients with severe symptomatic aortic stenosis at high operative risk with or without chronic kidney disease (CKD). Iodine contrast administration, rapid cardiac pacing and use of large core catheters in putative calcified arteries are among the most important drawbacks of TAVR, especially in CKD patients. The aim of the study was to examine the outcome of TAVR in CKD patients compared to no apparent CKD patients and to evaluate the parameters influencing renal function, in the whole cohort, during hospitalization

## METHODS

During the last two years TAVR was performed in 116 patients, 59 men and 57 women, of mean age 79±8.7 years.

The mean logistic Euro-SCORE was 25.8±12.1, the mean STS mortality was 6.4±3.7 and the mean STS morbidity & mortality was 28.1±10.5. Echocardiographic parameters were assessed pre- and post-TAVR. GFR (MDRD) and its changes (delta-GFR) were accessed at admission, 2<sup>nd</sup> and 4-5<sup>th</sup> day, respectively.

According to admitted GFR patients were divided in two groups: group-A (GFR<60ml/min) 73 patients and group-B (GFR >60ml/min) 43 patients. Pre-TAVR NYHA status II, III and IV were estimated in 10 (8.6%), 86 (74.2%) and 20 (17.2%) patients, respectively.

## RESULTS

TAVR was performed successfully transfemorally in 100 (86%), transapically in 7 (6%), transaortically in 8 (7%) and through subclavian access in 1 (1%) patients. Balloon expandable Sapien-XT was implanted in 79 (68%) patients and self expandable CoreValve in 37 (32%) patients (figure 1). The mean volume of iodinated x-ray contrast agent was 137±10.6, the mean ICU stay was 1±0.6 days and the mean hospital stay was 5±1.4 days.

The effective aortic valve area was increased from 0.67±0.15cm<sup>2</sup> to 1.83±0.48cm<sup>2</sup>, (p<0.001) and the mean transvalvular pressure gradient was declined from 81.4±20mmHg to 16.5±7mmHg, (p<0.001)(chart 1,2).

The renal function was decreased (delta-eGFR<-25%) in 18 patients (15.5%), improved (delta-eGFR>25%) in 16 patients (14%) and remained constant (-25%<delta-eGFR<25%) in 82 (70.5%) patients (chart 3). Both groups showed similar improvement, after TAVR, in all clinical and echocardiographic parameters. The change of renal function was not correlated with the estimated parameters and, interestingly, nor with the contrast volume. In our discriminate analysis none of the measured parameters determined the renal outcome.

Figure 1

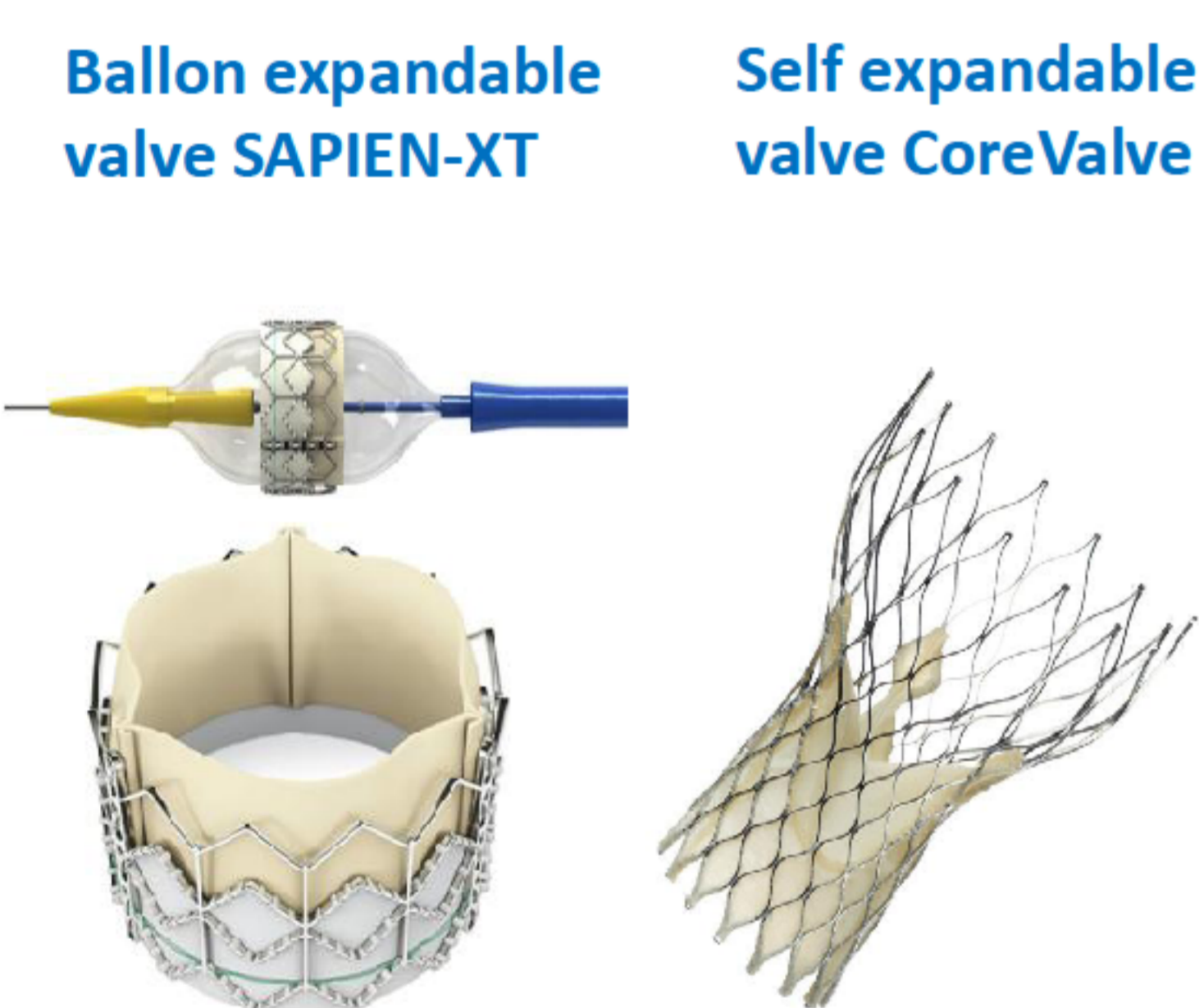


Chart 1

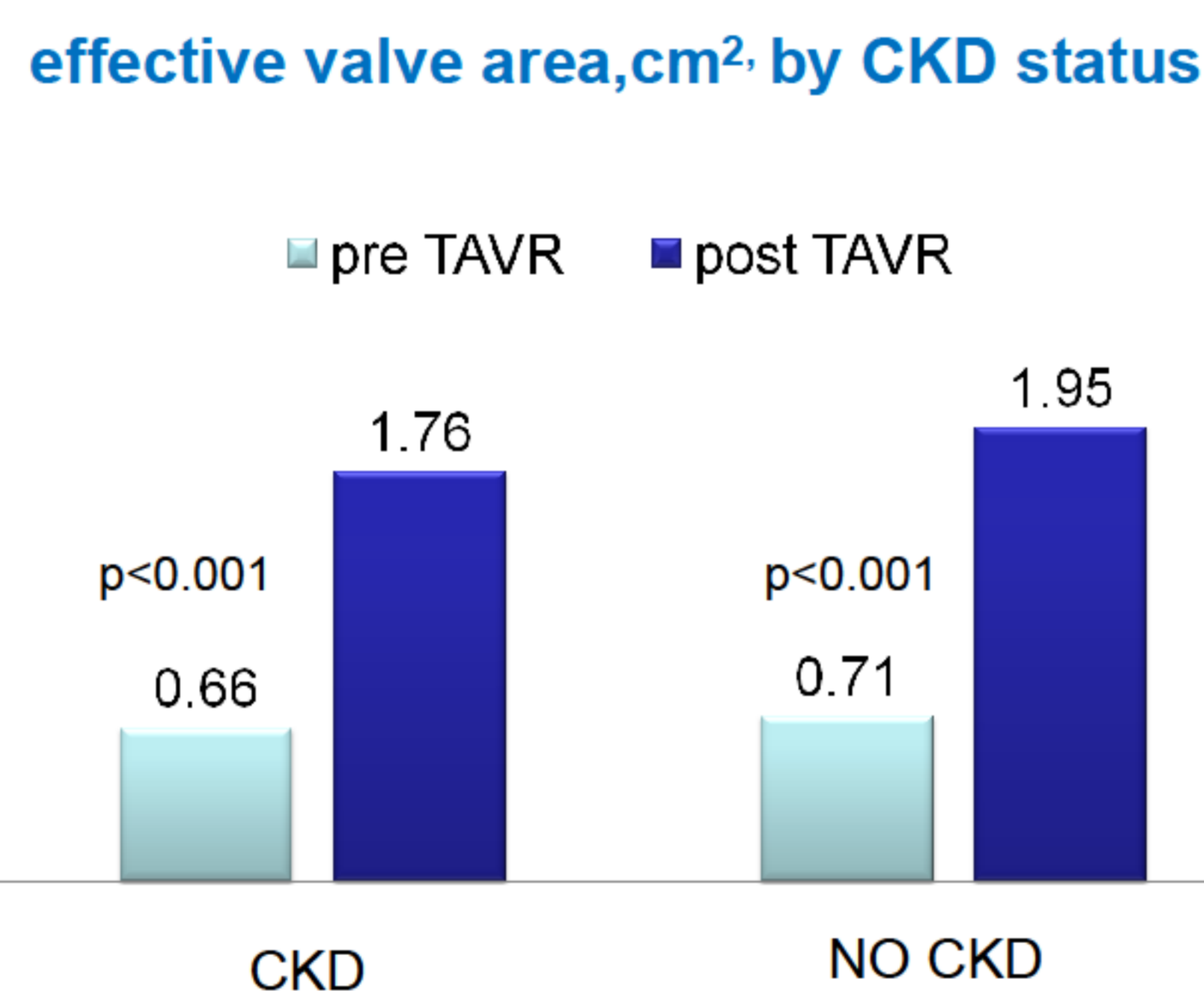


Chart 2

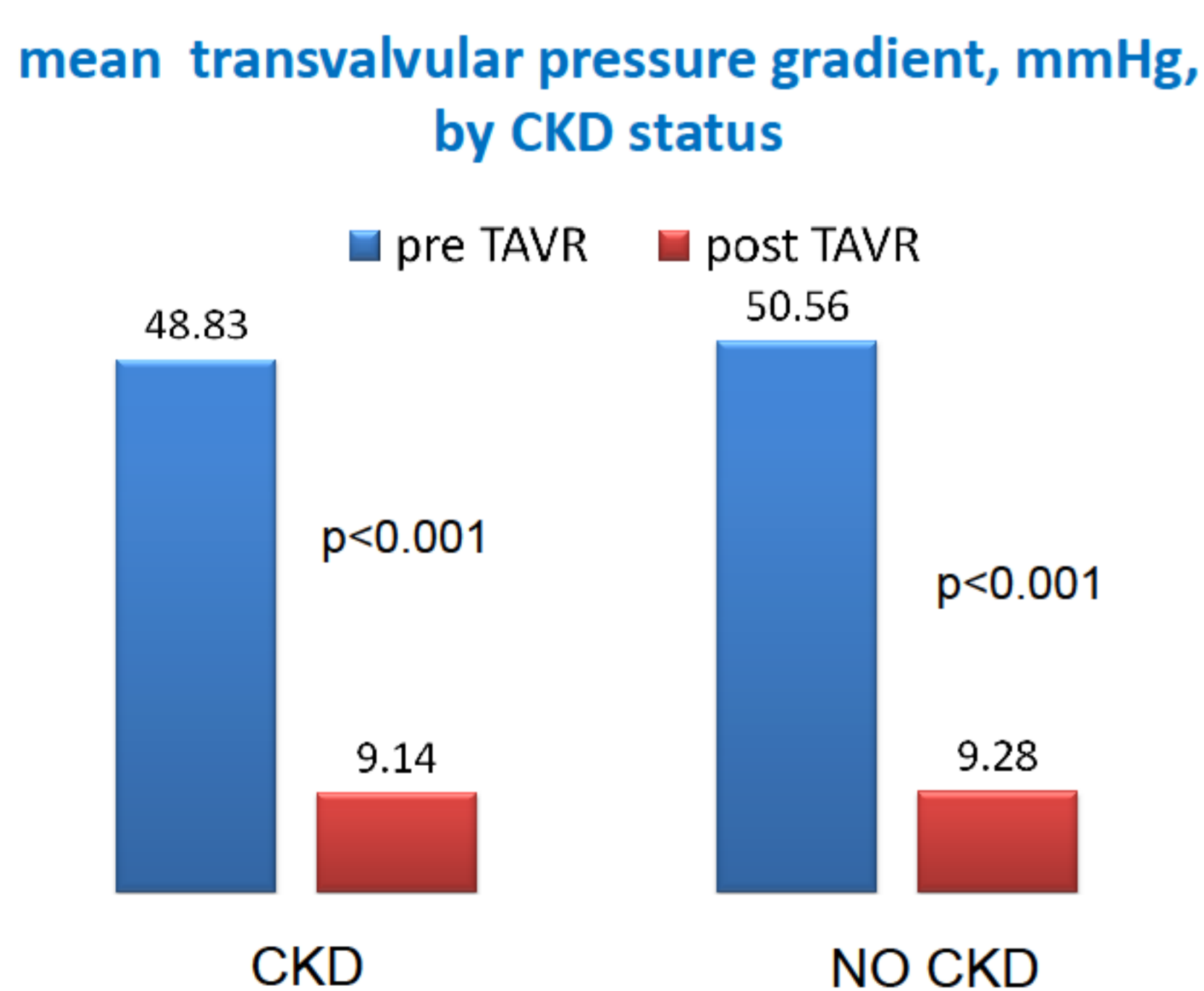
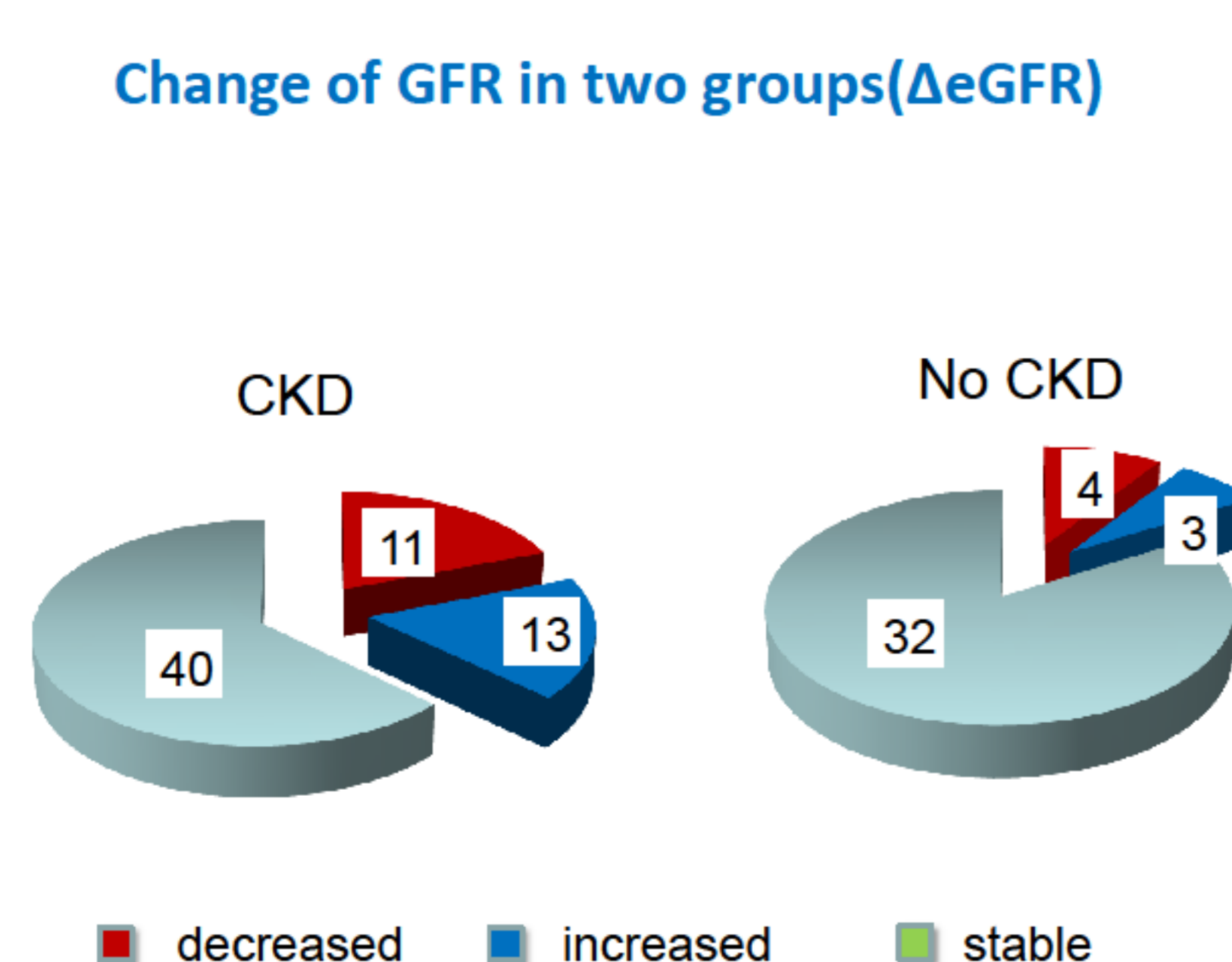


Chart 3



## CONCLUSION

In our data CKD was not an adverse factor for TAVR success. In addition, renal function was not influenced by iodine-contrast administration.

## REFERENCES:

- 1.Makkar RR, Fontana PG, Jilaihawi H, et al. Transcatheter Aortic-Valve Replacement for Inoperable Severe Aortic Stenosis. N Engl J Med 2012; 366:1696-1704.
- 2.Wessely M, Rau S, Lange P, et al. Chronic kidney disease is not associated with a higher risk for mortality or acute kidney injury in transcatheter aortic valve implantation. Nephrol Dial Transpl 2012;27:3502-3508.

