

# EDITORIAL COMMENT

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## Cardiac surgery in Dialysis patients - can we do better than in the past?

Dialysis patients have always been considered difficult and high risk for cardiac surgery, due to extensive vascular disease, poor functional reserve, and frequently multiple cardiovascular lesions. Additional problems posed by these patients include difficult volume and electrolyte control in the intra-operative and post-operative period, difficult hemostasis due to platelet dysfunction, and susceptibility to infection.

In this regard, isolated experiences have been published all over the world, and risk scores have also included dialysis patients in their patient pool when being constructed. Still, even though cardiac surgery is somewhat frequently performed in these patients, the outcomes are in some patients disappointing, while in other patients the intra-operative and post-operative period is almost as uneventful as in regular patients, albeit the programmed dialysis that always accompanies these patients.

Valvular percutaneous intervention has also opened new possibilities in these patients in whom cardiac surgery may be an excessive risk. Modern TAVI and mitral intervention techniques offer some of these patients a solution, but are far from being a treatment applicable to all - Biological valves (as all TAVI are) are susceptible to earlier structural valve deterioration in ESRD patients, mitral intervention is far from being long-lasting, and previous peripheral vascular procedures such as renal grafts in the iliac arteries and arm arteriovenous fistulas all complicate coronary and valvular percutaneous procedures. In addition, dialysis patients frequently present a coronary artery disease anatomy that is not amenable to percutaneous treatment (distal Left Main or ostial LAD disease, diffuse LAD disease, and very extensive calcification).

On the other hand, cardiac surgery frequently treats concomitant cardiac disease, associated valvular and coronary lesions are frequent in about 25% of cardiac surgery patients, and peripheral artery disease that may compromise saphenous harvest is very frequent in dialysis patients.

In this issue of SPCCTV, Ranchordás et al present their center's experience with dialysis patients submitted

to cardiac surgery (including 2 transapical TAVI's). Their results are similar to the previous published experiences and reflect the good quality of Portuguese Cardiac Surgery. They also point out that higher EuroscoreII, CCS score and longer cross-clamp times (normally associated with concomitant procedures), are associated with a higher procedural/in-hospital mortality. Long term mortality is also higher in dialysis patients when compared to matched non dialysed patients.

So, a physician treating these patients may offer the normally very unsatisfactory optimal medical therapy, the total percutaneous option, the total surgical treatment or a hybrid modality. We should consider that these patients have a lower life expectancy than the non dialysed cardiac patients, even after controlling for the presence of cardiac disease (as Ranchordás et al have shown). The survival and MAACCE free advantage that surgery normally offers when compared with percutaneous therapy may be, in some cases, irrelevant, due to the progressive nature of end-stage renal disease.

Another important consideration that the paper by Ranchordás et al shows us is that, globally speaking, isolated open procedures in these patients are safe and should be offered liberally (with the probable exception of very frail patients), with the same constraints that the surgery in the general population has. Multiple vessel coronary disease in the presence of peripheral arterial disease may occasionally be treated by an hybrid approach to avoid risky saphenous vein harvesting.

Concomitant procedures, like aortocoronary surgery, is not specifically contra-indicated, but longer cross-clamp times may guide the surgeon to opt for a hybrid approach, reserving the lesions less amenable for percutaneous treatment for the surgeon to treat. Surgical strategies to avoid longer cross clamp times, like performing coronary grafting on the beating heart, or using rapid-deployment aortic valves, may also help diminish cross clamp times (if this has an impact on survival remains to be determined).

Dialysis patients should be, and will continue to be offered the most definitive treatment for cardiac lesions. Surgeons and Cardiologists should also continue to strive for better outcomes and better long term results, and it is in difficult and risky patients that the Heart Team will probably more positively influence the outcomes.

#### REFERENCES

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