Title: ANTWOORD II: LVEF Recovery After AF Ablation in HF Patients
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Dr Marco Bergonti

"- My name is Marco Bergonti, I'm working now at Cardiocentro Instituto Ticino in Lugano, and we are here today to discuss our study about the possibility to predict left ventricular function recovery after AF ablation in patients with heart failure. It's called the ANTWOORD II Study.

ANTWOORD I Overview and ANTWOORD II Aims

So for more than two decades now, many different randomised controlled trials have tried to understand what is the best treatment strategy for patients with heart failure and atrial fibrillation. We try to understand whether rhythm control is better than rate control and ablation is better than medication. But actually, the result of this trial has been conflicting and indeed, there is no clear recommendation from the guidelines on who deserves an ablation. So we try to change a bit the paradigm. We didn't want to find a treatment that was good for everybody. What we wanted to do was to understand which patients will benefit from AF ablation, and which patients will not benefit from AF ablation, and may benefit from something else. So what we did in the ANTWOORD I study was to identify predictors of left ventricular ejection fraction recovery in this subset of patients and with this predictor, we built a score for individualised assessment.

The ANTWERP Scoring System and How it is Used in the Study

So the ANTWOORD score was built based on the ANTWOORD I where we analysed in a logistic regression analysis and cross-validation the predictors of left ventricular ejection fraction recovery. We were able to find four different categories for different baseline characteristics which were then used to build the score. We want to highlight that it's a negative score so the higher the point, the lower the possibility of recovery. And specifically, the variable included are the dimension of the left atrium so severe atrial dilation and paroxysmal AF, and this have a point of one, and on the other side

we have two points for the presence of known aetiology and for the presence of wide QRS. So overall, putting together these four simple variables we are able to predict, or at least this was the hypothesis of the ANTWOORD I we are able to predict if a patient was going to recuperate its ejection fraction after the ablation, and this was the question that we wanted to confirm with the ANTWOORD II.

Study Design, Entry Criteria and Patient Population

The question that we wanted to answer was is the ANTWOORD score developed in the ANTWOORD I effective in an external validation study? So in order to answer this question, we designed the ANTWOORD II. The way that we thought was to select the same entry criteria, so we selected again the patients with heart failure and impaired ejection fraction, so less than 50% and atrial fibrillation, which were referred for AF ablation, and these patients were followed over one year. So the entry criteria was the presence of AFib and LV dysfunction. These patients all underwent AFib ablation and then after one year, we were able to collect the echographic follow-up, and see who were the responders.

Main Findings

So based on this entry criteria, we were able to identify eight centres in Europe who were providing the patients and overall we were able to collect 605 patients. The follow-up was available for each one of these patients, and at the end of the follow-up, 70% was classified as responders. Then, when we applied the score to our patient population, we saw that indeed the patient with a low score had a very high probability of left ventricular function recovery, while patients with high score had a low probability of recovery. So overall, the general idea of the score was confirmed and indeed, when the score was applied to the general population the predictive value was very good, with a area under the curve of 0.86 and a p-value of less than 0.001.

Clinical Implications

So I think that our study has two important clinical implications. The first clinical implication is the possibility to better discuss the procedure with the patient, so the clinician can really talk with the patient and explain what is our expectation, what is your probability of recovery, and on the other side it's on a clinical science, clinical research level because if we have a score we are more able to standardise the inclusion criteria to homogenise the population, and to avoid the conflicted finding that we have had so far.

Limitations of the Study

Of course, our study has some limitation. I think the most important limitation is the inclusion of only patients referred for AF ablation. So these are already kind of selected patients with positive characteristics, and ideally what we should do in the future is to apply and redo the same study, but in the overall population of patients with heart failure and AFib and to guide the referral, maybe based even on the score. That's the first thing, and the second thing, the second important limitation is that we don't have that many data on heart failure medication that the patient were taking, and, of course, this has an important role in determining the prognosis of this patient, so this should also be a better study in the future.

Next Steps

For what concerns the next step, I think there is a great need to understand how to treat non-responders because we had 70% responders, and in these patients AF ablation works perfectly, these patients are good. The problem is the 30% of non-responders. In this patient we saw a 10 times higher mortality, 10 times higher hospitalisation, and we know that AFib ablation is not really working at least in the way that we are doing it now. So the real question is should we get better with ablation, or ablation is not the strategy, and I think that what's needed most is a trial among non-responders that should compare different treatment strategies for these patients, hopefully finding a solution."