**Title: AFSymposium 24: 3 Studies that Will Change Your Practice with Prof Angelo Auricchio**

**Participants: Dr Angelo Auricchio**

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**Dr Angelo Auricchio**

"I am the director of cardiac electrophysiology in Lugano, Switzerland, and very happy to be here today with you.

While there has been a large number of trial presented at this AF symposium 2024, all really interesting and certainly clinically relevant, probably do two or three that really were important in my clinical practice and specifically in the field of atrial fibrillation ablation is the one presented by Dr. Natale.

And the study was related to the evaluation of hemoglobinuria in patients undergoing PFA ablation. So pulse field ablation. So what they found is that relatively good number of patients, they have developed hemoglobinuria after PFA.

The interesting part of the study was that they looked at patients who have been in a sort of historical control, where they observed the problem, and then another group, where they start to do proactively to try to reduce or minimise the issue of hemoglobinuria.

The reason why hemoglobinuria happened in patients undergoing parts, field ablation is most likely related to the high field passing through erythrocyte. So where you create, really hemolysis, and so because of that, of course, you have then later anemoglobinuria.

By the way, the findings of Dr. Natale were pretty consistent with another very recent manuscript published in EP Europace, reporting exactly the same issue in a relatively large number of patients.

So the idea overall is that haemolysis really may exist, and this may be related to the fact that you may have an insufficient contact between the device, the ablation device, with the wall. So you're creating sort of a film in between, but also is probably related to the number, or certainly related to the number of applications.

So indeed, there was a correlation between the number of application with the probability to have hemolysis and hemoglobinuria.

So, overall, this indicates to me that, and this is also the summary of Dr. Natale, was, of course, you need to hydrate the patients, probably during and after the procedures, in a way that you can really reduce the renal or the kidney damage related to the hemoglobinuria.

I think that is very relevant for our field because PFA is a novel technology. So this is something new to all of us, not reported before. But these two manuscripts, one in JCCP and the other one in EP Europace, confirm that there is a potential issue. But this is a solvable complication, it's a manageable complication.

So the other study I was also quite interested in is the study presented by Dr. Musa Mansur at MGH. So he showed data, it is a prospective analysis or secondary analysis of a large trial which has been presented in the New England Journal of Medicine.

And the trial was designed in a way that there was a comparison between PFA and terminal ablation, which could be either the cryo or regular point-by-point radiofrequency.

So in that study, the idea was, let us look at the level of pulmonary vein stenosis, which might be a relevant issue in the long term. So far there has been very little attention or has been very little data, or if any data on the potential damage that PFA could have on pulmonary vein isolation, on pulmonary vein stenosis, and of course, what the other say, more conventional technique can do.

So the study was interesting because it showed quite clearly that PFA is by far the safest methodology or technique in order to avoid pulmonary vein stenosis. In contrast, cryo and radiofrequency ablation in particular had a significant reduction or had a major reduction in the diameter of certain veins, in particular of the left-inferior pulmonary vein.

So this is, I think it's a very strong signal that despite the fact that the efficacy of these three technologies and the long term, say one year and a half outcome of these three technologies, as far as af successful concern, it is pretty similar, but the safety of the PFA is significantly higher and much better.

So the third study is related to the best abstract award presented by Dr. Luigi DiBiase at Montefiore Hospital.

And the study was conducted in a pre-clinical setting. So it was a catheter which has a special sensor and designed to have sensor with PFA delivery. And essentially they put the sensor or the catheter in the ventricle and they looked at the level of energy as well as the level of pressure on the wall in order to understand which is the best combination to produce large region or best region in particular transmural lesion with the contact or with the best contact.

And indeed it looks like that contact sense of force with the combination of a certain energy is particularly helpful in predicting the depth of a lesion.

So essentially the transmurality, and I think these although is now only in preclinical. But if we translate this data into the clinical field, that might really be a major change in the way that we are using and controlling PFA.”