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IN THIS ISSUE OF EUROINTERVENTION

A state-of-the-art on mitral valve transcatheter edge-to-edge repair; comparing the ACURATE neo2 to the Evolut PRO/PRO+ and the SAPIEN 3 Ultra; durability and life expectancy after TAVI; mini focus on vulnerable plaque with articles on radial wall strain and a novel angiography-derived method for determining plaque composition and vulnerability; the PROGRESS-CTO perforation score; and more

Davide Capodanno, *Editor-in-Chief*

Dear readers of EuroIntervention,

With this issue we begin a new year together, my third year as Editor-in-Chief.

If we think of EuroIntervention as a racing car (in a very competitive world, by the way), then my first year of tenure was dedicated to understanding how to change gears and where the brakes were located, not to mention where to find the flashing lights and the buttons for lowering the windows.

For months after I took over, the Journal continued to publish articles that had been accepted during the previous calendar year, which made me quite anxious. I wanted to show you – as soon as possible – the type of articles we were now accepting which were based on somewhat different criteria than those in previous years.

This lag between accepted articles and published articles was a theme that dragged us on through 2020: the Journal was changing but you couldn't see the change.

In 2021, we started publishing articles accepted by the current Editorial Board and EuroIntervention began to take on an identity that was more faithful to what we had in mind from the beginning. The race car began to run faster, towards unprecedented goals, such as a higher impact factor than had previously been achieved.

2022 was the year we managed to reduce the waiting time between accepting an article and publishing it. We are constantly striving to get the most important and timely information to you with the briefest delays, but it's a fine balance. I'd like to go to print (or publish online) every 15 days in order to show you – almost immediately – the papers that pass the peer review stage, but what if two or three weeks pass us by and no papers are accepted because they are deemed below the Journal's current standards?

Speaking of peer reviews, as always in January, it is the time to celebrate our reviewers: everyone, without exception, should be thanked for the time they dedicate to EuroIntervention. And many of them have contributed to the selection of the articles that make up this issue.

Which ones? Here is the usual review…and then we'll introduce the reviewers themselves.

The focus of this issue's state-of-the-art is on mitral regurgitation and its non-surgical treatment using mitral valve transcatheter edge-to-edge repair (M-TEER). The continued evolution of the device joined with increasing operator experience and improved techniques worldwide has permitted M-TEER to be recommended by the European and US guidelines for patients with severe and symptomatic mitral regurgitation. Authors **Jörg Hausleiter, Fabien Praz and colleagues** provide a systematic overview of M-TEER, looking at patient selection and evaluation as well as the critical elements involved in decision-making. They discuss the different anatomies, offer the latest data for the use of M-TEER in primary as well as secondary mitral regurgitation and provide information concerning device selection, offering tips and tricks for its best use. Finally, they consider the challenging questions that remain unresolved, touching on the areas of mitral valve transcatheter edge-to-edge repair that still require further study and experience.

In the section on interventions for valvular disease and heart failure, we look at two articles, both accompanied by an editorial by **Patrick W. Serruys, Ahmed Elkoumy and Scot Garg**.

The first article compares two recent transcatheter aortic valve implantation (TAVI) devices, the ACURATE *neo2* and Evolut PRO/PRO+. Authors **Sara Baggio, Antonio Mangieri and colleagues** studied a real-world population who underwent TAVI using one of these devices. They concluded that both achieved similar rates of Valve Academic Research Consortium (VARC)-3-defined technical success, a pre-discharge performance of the valve as expected, and 30-day device success. The ACURATE *neo2*, however, required less permanent pacemaker implantation. While further studies are warranted, this points to the increasingly diverse range and wider availability of safe and effective devices which allow for a more tailored approach to individual patient anatomies when performing TAVI.

The second article, by **Costanza Pellegrini, Won-Keun Kim and colleagues**, compares the ACURATE *neo2* with the SAPIEN 3 Ultra and finds the short-term outcomes similar for the two different types of valves. And while the ACURATE *neo2* platform had lower transprosthetic gradients, which offered higher rates of device success, the SAPIEN 3 Ultra had lower rates of mild paravalvular leak.

Until recently, the majority of TAVI patients were older and frail. In order to determine the long-term durability of the devices themselves as well as the long-term viability of TAVI, **Maarten Vanhaverbeke, Lars Sondergaard and Ole De Backer** lay out their reasoning for the need to create studies in younger cohorts of patients comparing TAVI to surgical aortic valve replacement. These younger patients would have a greater life expectancy with a lower burden of comorbidities than found in current studies, thus allowing for a more comprehensive approach to the long-term durability of transcatheter heart valves as well as offering robust data for patient selection, regardless of age.

We now turn to coronary interventions and our mini focus on vulnerable plaque, **Huihong Hong, Shengxian Tu and colleagues** study the association of angiography-based radial wall strain with plaque composition and markers of plaque vulnerability in patients with intermediate coronary stenosis. The method they describe, based on a single projection made during diagnostic angiography, could offer a cost- and time-efficient tool for evaluating the mechanical properties of the plaque, complementing angiography-based physiological assessments and helping with decision-making.

In the next article in our mini focus, **Seokhun Yang, Bon-Kwon Koo and colleagues** looked at patients undergoing fractional flow reserve-guided treatment with coronary computed tomography angiography. The authors observed that the risk of clinical events was highest in the presence of quantitative or qualitative high-risk plaque and that when both types of high-risk plaque were present there were better outcomes in the treatment of lesions with a percutaneous coronary intervention (PCI) as opposed to medical treatment. This led the authors to conclude that these qualitative and quantitative plaque measurements should be part of an integrated assessment of the lesion, with this type of assessment being another key element in determining risk stratification and selecting the appropriate treatment strategies. This article is accompanied by an editorial by **Stephan Achenbach**.

The PROGRESS-CTO perforation score, the subject of the next article, was developed by **Spyridon Kostantinis, Emmanouil Brilakis and colleagues** to predict clinical coronary artery perforation in patients undergoing chronic total occlusion PCI. Using the close to 10,000 cases from the PROGRESS-CTO registry, the authors determined that five factors were independently associated with perforation, including aspects such as patient age, moderate to severe calcification or the use of the retrograde approach. Showing an acceptable correlation with existing events, the authors believe that the PROGRESS-CTO perforation score could be a useful tool for predicting risk, procedural planning and clinical decision-making. This article is accompanied by an editorial by **Georgios Sianos and Arif Al Nooryani**.

And, now, before we turn to the articles themselves – drumroll – let me present, again and with great thanks, our reviewer awards for 2022.