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IN THIS ISSUE OF EUROINTERVENTION

**A EuroIntervention state of the art on glucose management, diabetes and PCI; a mini focus on chronic total occlusions; early spontaneous reperfusion in patients with STEMI; quantitative flow and resistance reserve measurements for coronary microvascular function; balloon aortic valvuloplasty vs medical therapy for patients with severe aortic stenosis needing urgent non-cardiac surgery; IVUS and OFDI in peripheral interventions; and more...**

**Davide Capodanno, *Editor-in-Chief***

In recent months we implemented a new system concerning accepted articles and which I hope will find favour with our authors and readership. Let me explain by starting with a small premise: for several years, EuroIntervention has offered its readers the opportunity to see their articles published online a few days after acceptance in a preliminary form called “JAA” (Just Accepted Article). In other journals this option goes by many names including “Early view” or “Early access”. There are advantages and disadvantages with this approach, as with everything. The advantage is that the article is immediately visible and citable, which rewards the authors and is a service for the scientific community that can promptly access new information. The disadvantage is that the article goes online in a format that is not the final one as it has not gone through the intensive copy-editing and layout stages, which we at EuroIntervention are particularly keen on.

I don't know about you, but as a reader and as an author I like articles to be downloaded in their best and final form, and as an Editor I can certainly confirm this

feeling. The alternative to JAA is the so-called “AOP” (Ahead Of Print), which is the definitive version of the paper, in its final layout, ready to be allocated to one of the next issues of the Journal. Producing an AOP takes time and attention to detail. A substantial reason for maintaining the JAA option therefore concerns printing times and what I had defined in another editorial as “backlog” (articles accepted pending publication). With a large backlog, the JAAs serve to avoid the delay in publication which in the long run could bother the author and moreover does not represent a good service to the reader either, especially in this digital age where the electronic word travels faster than the printed one.

With the lean backlog we now have, the rush to publish JAAs is probably less pressing like other journals which don't, but I hope you will agree it's still a valuable service. How then to preserve the timeliness while increasing the quality of the product to be downloaded? Simple (at least to say) – by anticipating production times and publishing the articles accepted as AOPs, in a very reasonable time frame. I am convinced that the authors will appreciate this new system, which aligns EuroIntervention with the standards of other journals with higher impact factors. If I'm wrong, please let us know. We are always eager to have a constructive discussion for the sake of the Journal (and, by the way, this very change was prompted by the feedback we received from an author).

After this preamble, as always, let's review the core of what we're talking about – the contents of this issue itself.

As the number of patients with acute or chronic coronary syndromes and diabetes who undergo percutaneous coronary interventions (PCI) increases each year, glucose management is of critical interest. In this edition's EuroIntervention State of the Art, authors **Isabelle Johansson, Francesco Cosentino and colleagues** look at the management of these patients, offering an overview of current strategies for optimal glycaemic control seen as a factor for improving long-term outcomes. For the management of diabetic and pre-diabetic patients, the authors outline current recommendations for glucose-lowering therapy, discuss recent evidence-based indications for revascularisation along with the targets for glycaemic control post-revascularisation, as well as the goals for concomitant risk factor control. The article also discusses the need for further trials concerning new agents such as sodium-glucose co-transporter 2 inhibitor and glucagon-like peptide-1 receptor agonists as well as the need for research that could more fully define the role of hypoglycaemia in the occurrence of cardiovascular events and mortality.

Chronic total occlusions (CTOs) are the subject of this edition's mini focus. We begin with an article by **Makoto Sekigichi, Etsuo Tsuchikane and colleagues** studying the initial outcomes and strategy of PCI for in-stent CTOs according to the occlusion pattern itself. Using the Japanese CTO-PCI Expert Registry, the authors determined that the classification of occlusion patterns could be helpful in patient selection as well as the eventual clinical approach for patients with in-stent CTO. They stratified the results into four patterns – CTO within the stent segment, CTO beyond the distal edge, CTO beyond the proximal edge, and CTO beyond both the proximal and distal edges – with the first pattern showing the best outcomes and the last the poorest. This article is accompanied by an editorial by **James C. Spratt and J.D. Hung**.

A post-stent intravascular ultrasound (IVUS) evaluation after CTO-PCI has been associated with better outcomes and a significantly lower risk of target lesion revascularisation/reocclusion as compared to procedures without post-stent IVUS. Authors **Osung Kwon, Seong-Wook Park and colleagues** observed that the only parameter independently associated with target lesion revascularisation/reocclusion was the cut-off value for the final minimal stent area. They conclude that this measure is an important indicator for

reducing the subsequent risk for adverse cardiac events after CTO-PCI and recommend the use of post-stent IVUS for these procedures.

In the treatment of CTO occlusions using the retrograde approach, **Yongzhen Fan, Dimitri Karpaliotis and colleagues** consider the relationship between IVUS-defined antegrade and retrograde wire position on procedural outcomes. Four possible locations of the antegrade wire and retrograde wire position were determined, with IVUS-identified vascular compartment concordance – irrespective of intraplaque or subintimal passage – leading to higher success rates than IVUS-identified vascular compartment mismatch, offering further guidance on when wire repositioning would be required to ensure procedural success.

**Erion Xhepa, Massimiliano Fusaro and colleagues** used the ISAR-CTO registry to compare clinical and angiographic outcomes following recanalisation of CTOs using either contemporary dissection and re-entry techniques (DART) or intraplaque techniques. Contrary to what was previously thought, the authors found that both techniques were associated with similar midterm clinical and angiographic outcomes as well as comparable low rates of occlusive restenosis. The authors went on to underline that irrespective of the recanalisation technique used, the overall incidences of binary restenosis and target lesion revascularisation following CTO recanalisation remain higher than that reported for non-CTO PCI.

Early spontaneous reperfusion is not uncommon in patients with ST-segment elevation myocardial infarction. In another article from the coronary section, **Jincheng Guo, Jing Li and colleagues** looked at plaque and thrombus characteristics to see which were implicated in this phenomenon concluding that non-ruptured plaque may be the culprit. In an accompanying editorial **Michael Joner, Renu Virmani and colleagues** discuss the nature and applicability of this observation.

We know that continuous thermodilution can accurately measure coronary flow during hyperaemia. In another article, authors **Emanuele Gallinoro, Bernard De Bruyne and colleagues** investigated whether lower infusion rates of saline could also enable reliable volumetric coronary blood flow measurements at rest. Observing that thermodilution enabled quantification of both resting and hyperaemic coronary blood flow, flow and resistance reserve based on volumetric flow data could be calculated. Continuous thermodilution thus offers the possibility of truly assessing quantitative flow and resistance reserve measurements and the metrics of coronary microvascular function can now be derived from absolute measurements in an operator-independent manner.

An article on valvular disease and heart failure takes a look at patients with severe aortic stenosis who need urgent non-cardiac surgery, studying whether balloon aortic valvuloplasty is a valid therapeutic alternative to medical therapy in these high-risk cases. Authors **Nicolas Debry, Eric Van Belle and colleagues** studied patients who had urgent non-cardiac surgery treated with either approach and found little difference in mortality, heart failure, and other cardiovascular outcomes at three months between the two therapies. This article is accompanied by an editorial by **Julinda Mehilli and Florian Zauner**.

In peripheral endovascular therapy, the distinction between medial and intimal calcification is important and requires different procedural approaches. Do IVUS and optical frequency domain imaging have the ability to detect the two types of calcification in human peripheral arteries? Authors **Hiroyuki Jinnouchi, Alope V. Finn and colleagues** evaluate the two imaging techniques to see if they can identify medial or intimal calcification and find that medial calcification was less detectable by optical frequency domain imaging or IVUS than intimal calcification, due to overlapped calcification and an unclear border between intima and media. The ability to effectively distinguish between these two types of calcification by intravascular imaging could decrease unnecessary use of these approaches and also reduce vascular complications.

And now, let's let the authors speak for themselves.