- Oh, hello, everyone. Welcome to this latest edition of Journal Club on behalf of the Arrhythmia Academy. I'm Dhiraj Gupta from Liverpool, and I'm going to be coordinating the discussion as usual. For this edition of Journal Club, we don't have a particular EP procedure that's being discussed or a particular diagnosis, which is being discussed. It's in fact, something totally different and something very unusual as compared to our previous areas of discussion. It all relates to the use of social media for cardiology, especially electrophysiology. And you don't need me to tell you that the use of social media for cardiology has been increasing exponentially over the past few years. There are many social media channels such as Facebook or LinkedIn, but particularly Twitter. And a lot of our colleagues have taken to Twitter like a duck takes to water, but then there are other people who are very reluctant about using Twitter. So how do you go about using Twitter to the best of your capability? How do you get the best out of the medium? Well, we are delighted that two of our electrophysiologist colleagues have published a paper recently in Europace on dos and don'ts of Twitter use for electrophysiology. A practical guide for the use of Twitter for us folks. And I'm delighted to be joined by them. So that's David Duncker from Hannover in Germany and Dominik Linz from Maastricht in Netherlands. So welcome to both of you.

- Thank you very much, Dhiraj. It's a pleasure being here.

- Thanks very much for joining us. So the way we will run this little session is for David to present a few slides, which basically covers in brief what the paper was all about. And then we'll have a little discussion at the end. So David, if you can take over the screen now please, and show us some slides.

- Sure, Dhiraj. Thank you very much for this nice introduction. And as you said, Twitter has really developed being a professional and powerful tool for scientific interaction, for education, for networking. And it really has been implemented into our daily routine in interacting with our colleagues, and especially for us being EPeeps, we wanted to provide a really practical guide for those, as you said, being reluctant or hesitant to join this community and to use this tool for all the benefits it has. Of course, it has limitations and we can discuss some of them, but it has developed being really a powerful tool for us in our daily routine, as I said. And of course I invite you to read the full paper, but I have here the, some of our main figures and tables, just to show you what it is about. It is really thought to be a practical guidance for everybody who wants to join on Twitter, showing it hands on how to use it. And this is one of our main figures in this manuscript, showing the different points, how to engage with a tweet, how to build a tweet, how to react because it's social media, right? It's not only reading through some lines, but it's interacting with the colleagues and reacting on their comments, et cetera. And we wanted to provide some guidance for this too. We also tried to show how to, how to build more than only a tweet, a command, but maybe to think about a tweetorial. We have a practical guidance for a tweetorial, and some really hands-on commands how to use it. Another important impact of social media was the impact during international congresses in the last year. And you see here, another figure we used in this document to show really the impact during the ESC Congress 2019, showing the reach, and the networking effect and the overall activity during this Congress with nearly 50,000 tweets on the ESC Congress alone. And we have similar activities during the EHRA Congress that we are waiting for too. And of course we discuss some of the strengths of social media and especially Twitter, but also the limitations. And I will not go into detail, but of course we have important strength on the immediate impact you have if you tweet a command, if you tweet any scientific new content of new technologies, new strategies, et cetera. But let's not forget that there are of course limitations on this aspect, that it is, of course, a democratic tool, but it is not peer reviewed. And in science, we should aim for high quality and peer review is one aspect of high scientific quality, of course. On the other hand is a matter of democratic peer review perhaps because everybody can comment on new findings, on new scientific aspects, et cetera. So, I invite you all to read through this manuscript and I hope we can increase the further Twitter activity in the next months together.

- Okay, well, great, David. That's a very nice introduction to this very interesting topic. So you've obviously been on Twitter for a while now, and I understand Dominik you've been on Twitter for quite a while, too. So if I were to ask both of you, what are the biggest advantages you have noticed in your practise by joining Twitter?

- So, actually I think one of the main advantages is actually that Twitter can help us to continuously get information about the new ongoing topics. So I actually think about, well, when did I actually read the last Time Circulation or Europace really in paper, it's a very long time ago because I mainly actually look at those manuscripts via Twitter. So I just follow the tweets. There are actually editors really responsible for social media nowadays, and they actually try to identify the most important and most interesting ones. And to me as a person using Twitter can actually follow those journals. I think this is actually one huge advantage. Another advantage for me is also how we experience at the moment, conferences. This changed significantly, right? So actually some years ago it was still that we actually had a paper of the programme and we went, flew to the conferences. We do not fly anymore, we don't have paper anymore. We now actually prepare everything via Twitter. We actually see the promotion of the sessions on Twitter, we see the discussion on Twitter and we actually follow most of the discussions and also the conferences on Twitter. I think those are actually the huge advantages, for me at least.

- David, do you agree with that? Do you have any other advantages that you've observed?

- Of course, I fully agree with that. And that's the main aspect to me as well. I may add that it also breaks down some barriers we could experience. It breaks down the distance, of course, because we can interact with colleagues from U.S., from any country in the world. And it breaks also down barriers between generations, let's say. Because we have easier way to interact between juniors and seniors, get some mentoring through social media. And that's an important point to me too.

- Yeah, indeed. I think it really does help in building networks, across, you know, countries and across continents. So I think it really is a very democratic process that way. I totally agree with Dominik on the fact that nowadays most people get education through social media. The attention span is such that people perhaps don't have the patience to go through reams of papers, through journals and that, you know, very often they will follow the journals that they want to follow on Twitter. And I noticed a lot of the Journal of Cardiology journals and EP journals are very good in terms of tweeting their content. And you can access whichever paper you want at the click of a button, which is obviously a lot better than having to wait at the end of the month for the full, you know, the written version of the journal to come to you. So that, and even meetings as well, most scientific meetings now are being followed by thousands and thousands of people worldwide in real-time via Twitter. Especially during COVID times where travel has become such a rarity, social media has really helped in us being able to access education remotely. So I agree with you on that one. Now, you know, there are obviously different kinds of metrics now, when it comes to social media. In the olden days, when we had the traditional publishing model, it all used to be in your citations for your paper, and now people have different kind of criteria. You have the altmetric score, you have the number of followers, the number of retweets for your, you know, your Twitter feed, et cetera. So is that going to become increasingly important in terms of determining somebody's profile. Whether that's academic profile or not in going forward?

- I actually think it adds a lot. So if we consider, for example, how long it takes until a journal or a manuscript is actually cited, it always takes a year or even longer. So if we think now about, for example, tweets about a manuscript or tweets about an initial idea, even before something is published, this becomes much, much more, much quicker. And I think one important point here is also like, yeah, like we already mentioned before where it's not peer reviewed, but on the other hand, it's actually very spontaneous. We can also communicate about initial ideas, which might actually, yeah, found to be wrong or not, not accurate at the end, but it also actually provides a lot of options for innovation. I think that's also nice. If it really replaces something like an H index, I think it doesn't replace it. It will most likely add also information about how you are active on social media and how you are engaging and how you are actually, or how your ideas are picked up. And yeah, I actually think that in the future, probably the next generation of EPs might just want to, yeah, just apply for a position also, It might be not just the H index but maybe also the followers or well, whatever.

- Yes, yes, I will jump there as well. Some of the biggest names in EP are also quite active on Twitter as well. So it really, I think it works both ways. I read a paper that your, the paper that ends up being tweeted more on Twitter also has a higher citation index a year later. So I don't know if that's correct or not, but certainly it seems to stir up attention about that paper and people tend to then cite it a bit more than if it were not on Twitter at all.

- Yeah, I think actually this is a very interesting point. Actually, again, coming to the role of social media for journals, for example. So on the one hand, there are those social media editors, but on the other hand, there are also large studies indicating, it was actually a randomised study, which was performed for European Heart Journal, for example. What they actually did is that they randomised all manuscripts during a certain period of time, either for social media promotion or no promotion, and what they found exactly like you said before, so those which were tweeted and promoted on social media, those manuscripts also had significantly more citations afterwards. And this indicates actually that it becomes a very powerful tool, not just for us researchers, but then also for those, for the journals to actually increase their impact factor to increase also the uptake and the early uptake of those manuscripts. And to be able to follow this early uptake, well, you need to be on social media because otherwise you miss this, right?

- Well, obviously we've discussed some of the advantages of Twitter. David, I noticed there was a slide there which you mentioned some of the disadvantages as well, or some of the things that we have to be a bit careful about. Would you mind expanding on that for our viewers?

- Yeah, sure. I mean, I don't want to be the devil's advocate today because of course I want to have more people engaging on social media, but we should be aware of the limitations, and we should name them as well. As I said previously, we don't have a real peer review for any tweet. So the diffusion of any content will not be regulated except by the community, of course. If you react on a post and you say this is not correct, or this has to be corrected in wording, phrasing, scientific content, et cetera, you can react on this tweet, but you can. Yeah, it will not be rejected by Twitter, right, as for a scientific journal. And I mean, this is a limitation, but this is something we can of course connect with and react with, because if the community reacts on scientific fraud or scientific content that is not correct, then the system regularises itself, that's one important point. Another point is that the algorithm of Twitter works by who you follow. If you follow any football team, you will get content from football teams. If you follow mainly EPs, then you get mainly EP content. And this of course creates a follower bias because you get the content you decide, this is maybe a benefit, but also a limitation, because you create a bubble of content that you chose and you will not be provided with other content. This helps to have only EP content, of course, or scientific content, if you follow the right people, but it could also limit what you are provided with. And the other point is an important point, you also mentioned already is that in science, the content normally is not that easy that it can really be truncated into 280 signs. And normally it is more complex than that. And we need to be aware of that. Of course, this is a medium of short messages and science is more than that.

- I agree with you entirely. No, I think it's absolutely right. As you mentioned, brevity is absolutely at the heart of Twitter. You've got to condense your message in 280 characters or fewer. And I think that's good because, you know, if it's something important you should be, if you know what you want to say, and it's something important, you should be able to condense it. I mean, on that note, we should probably try to bring this little meeting to a close as well. So I hope you managed to have a little bit of interest in this topic, and I hope our viewers will read your paper. I certainly enjoyed reading it. And we hope to see you all on Twitter, because I can tell you both I'm on Twitter, as well as David and Dominik as well. And we are really enjoying it and hope to see you all on Twitter soon. So thank you very much for your attention.