

***“The Heart is Uno”*: If AF begets HF and HF begets AF, can patients with concurrent incident AF and HF constitute an individual subgroup?**

Words: 416

We have read with great interest the eloquent paper by *Santhakrishna* and colleagues demonstrating that among patients from the *Framingham* cohort with new AF, more than one third had HF at some point. Conversely, among patients with new HF, more than half had AF. This had major implications in prognosis, as patients affected by both conditions did worse in terms of mortality [1].

On a physiologic level, even though there is an atrial and a ventricular syncytium connected by a specialized electrical conduction system, due to the very close anatomic relations of these structures we tend to consider the heart as a single (*“uno”* – one) muscle. This has been neglected in cardiomyopathy classifications [2], but a recent concept of atrial cardiomyopathy with implications on prognosis has been emerging [3-4]. Therefore, in the future we may be speaking of primary atrial cardiomyopathies, ventricular cardiomyopathies and mixed cardiomyopathies. Imaging may provide more insights into atrial cardiomyopathies [5], as while some forms may be primarily electric (i.e. atrial channelopathies), in others forms there may be contribution of stretching, fibrosis, inflammation or other structural changes. Under that perspective, we can theoretically hypothesize that in this cohort, and according to what the authors have shown, AF begets HF (some of these patients may have forms of atrial cardiomyopathy that compromises LV function over time, progressing to global cardiomyopathy at a later stage) and the opposite. The authors

have assessed patients with incident AF and patients with incident HF in separate. However, under that perspective, it would have been of interest to analyse a third and possibly different group of patients: the group of patients where AF and HF have developed in a very close temporal proximity (e.g. AF presenting with concurrent HF or HF developing in the first 30 days - corresponding to 12% of AF diagnoses; and HF presenting with concurrent AF – corresponding to 18% of HF diagnoses) and who may possibly be representative of a global cardiomyopathy involving both atria and ventricles right from start. It would be of interest to know if this truly represents a different entity and whether or not the prognosis of these patients is different to that of patients who later progress to develop both conditions. Can this group of patients represent a more aggressive and generalized form of a cardiomyopathic involvement/process right *ab initio* (a true mixed cardiomyopathy) leading to a worse prognosis or is it just a fortuitous time occurrence where concurrent development of both conditions does not portend a worse outcome?

References

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