

# Is Left Atrial Appendage Occlusion Really Efficacious in Avoiding Administering Anticoagulant Drugs for the Prevention of Cardioembolic Events in Patients With Atrial Fibrillation?

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Left atrial appendage occlusion (LAAO), in particular with Watchman device [1] has become the *leitmotiv* of several recent cardioembolic prevention campaigns for atrial fibrillation (AF). The rationale of the LAAO lies in the fact that the vast majority of cardioembolic events, at the level of cerebral, mesenteric, splenic or peripheral vascular districts, would depend on the detachment of embolic fragments from the left atrial appendage. There are many points open to discussion and in-depth reasoning. For example it is very interesting to make comparisons between LAAO and anticoagulant therapy. In the latter, the support to the clinical decision brought by transesophageal echocardiography (TEE) is rather limited, because the exclusion of the existence of a thrombus within the left atrial appendage with the use of TEE does not exempt the treating physician from the task of prescribing an anticoagulant therapy, once more than 48 h have passed since the onset of AF. In fact, due to its low sensitivity and consequent poor negative predictive value, TEE is usually omitted in the current operational process for the management of AF (paroxysmal, persistent or long-lasting persistent). Instead, the AF management involves the systematic adoption of therapy with non-vitamin K antagonist anticoagulant drugs, as in the cases of non-valvular AF, or with warfarin, for valvular AF. On the contrary, in the case of a clinical picture poorly compatible with chronic anticoagulant therapy, for example an AF episode that occurs in a Werlhof's disease patient [2], TEE is usually practiced, and the treating physician carefully evaluates the possible findings, i.e., 1) complete negativity; 2) "smoke" or 3) "sludge" patterns or, as the extreme part of this continuum 4) overt positivity. The latter is defined by the clear documentation of thrombus in the left atrial appendage. Only in the cases in which the signals of activation of the atrial thrombogenesis are present, i.e., the last three cases, the indication to the LAAO is put forward. Instead the anticoagulation is pre-

ferred in case of totally negative response to the TEE. The reason is that LAAO cannot be undertaken lightly in all patients with AF. Thus, provided that certain conditions are met [2], the interventional approach by Watchman device should be offered only to patients with absolute or relative contraindications to the anticoagulant therapy. Really, LAAO by Watchman in at least 10% of cases fails and in a further 20% of cases is incomplete (persistence of periprosthetic leaks and/or potentially embolic appendage (atrium patency due to abnormal anatomy)). In cases of LAAO procedural failure, anticoagulation is mandatory. Therefore in AF patients at low risk of cardioembolic events who can benefit from a simple anticoagulation, the commonly adopted strategy is to avoid practicing LAAO. Furthermore LAAO with Watchman device does not exempt the treating physician from anticoagulation in at least 30% of cases, i.e., those with residual peri-device leak, device failure or device embolization [3]. Finally the puncture of the interatrial septum for the introduction of this device entails the creation of a fairly wide discontinuity, i.e., an iatrogenic atrial septal defect, which requires in the most challenging cases an antiplatelet therapy with chronic clopidogrel or an anticoagulant. Therefore, in the face of such an uncertain outcome, is it still correct to say *sic et simpliciter* that LAAO allows avoiding anticoagulant or antiplatelet therapy in patients with chronic atrial fibrillation?

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## Conflict of Interest

The authors Renato De Vecchis, Andrea Paccone and Carmelina Ariano do not have any conflicts of interest to declare concerning the present article.

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## Informed Consent

Not applicable.

## Author Contributions

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