

Gut To Heart: Acid Reflux Disease In Atrial Fibrillation And The Role Of Proton Pump Inhibitor

Mohit K Turagam, MD¹, Poonam Velagapudi, MD²

¹Department of Medicine, University of Wisconsin School of Medicine and Public Health-Madison, WI, USA. ²Division of Cardiovascular Medicine, University of Missouri, Columbia, MO, USA.

Atrial fibrillation (AF) is the most common cardiac dysrhythmia reported worldwide with an estimated current prevalence of 2.5 million people in the United States and projected to affect 12.5 million by 2050.¹ Acid reflux disease is a very common condition affecting 20% of the population in the United States.² There have been some recent reports demonstrating a correlation between AF and acid reflux disease, especially in young adults and athletes.³ Acid reflux disease is also commonly associated with obesity and metabolic syndrome which are often traditional risk factors for AF. The actual mechanism behind this association remains elusive. It has been hypothesized that autonomic stimulation and inflammation from esophageal acid exposure can cause AF.³ Local pericarditis or myocarditis, stimulation of the afferent-efferent autonomic reflex mechanism and release of inflammatory mediators like interleukins (IL-6 and IL-1b) are a few suggested mechanisms.³ However, it remains unclear what degree of esophageal acid exposure may trigger AF. Studies involving acid reflux and AF have consistently demonstrated that endoscopic evidence of esophagitis significantly increased the risk of AF; including a study by Bunch et al which reported that acid reflux disease significantly increased the risk of AF only in the presence of esophagitis (HR 1.94, 95% CI 1.35 to 2.78, $p < 0.001$).⁴ It may be hypothesized that there may be a graded phenomenon where acid reflux in genetically susceptible individuals may contribute to the onset, recurrence or progression of AF. There has been some anecdotal evidence that treatment of acid reflux disease in patients with AF with a trial of proton pump inhibitors (PPI) may successfully treat symptoms of palpitations, reduce paroxysmal episodes, prevent progression and facilitate success of cardioversion.³ A study by Reddy YM et al reported that acid reflux disease may be a trigger in patients with AF and radiofrequency catheter ablation resulted in successful freedom from AF at one year follow up in a small prospective-case control study.⁵ Understanding the association

between acid reflux disease and AF is extremely important in the global multimodality treatment strategies to improve outcomes in patients with AF, especially with catheter ablation success rates for AF being around 50%. It is possible that acid reflux disease may indeed be the cause for progression of paroxysmal into persistent AF in a small subset of population. A trial of PPI in this subset of patients along with catheter ablation may improve outcomes. However, this evidence comes from small retrospective and observational studies which require further validation by large prospective trials.

References:

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Disclosures:
None.

Corresponding Author:
Mohit K Turagam, MD
Department of Medicine,
University of Wisconsin School of Medicine and Public Health-Madison,
3116 Highland Avenue, Madison
WI, USA.