Throughout the ages there has been little else as impressive to both the patient and physician as abnormalities and aberrancy in the heartbeat. It was through careful observation and characterization of physiology that the tactile measurement of the pulse translated and evolved in to the vast field of cardiology we know today. Atrial fibrillation or “pulsus irregularis perpetus” or “delirium cordis”, a name with which it was incepted as the chaotic irregularity of arterial pulse, though clearly acknowledged by most of physicians of the ancient era, has been puzzling the cardiology fraternity since ages. William Harvey (1578-1657) was probably the first to describe fibrillation of the auricles in animals in 1628. The French “clinical pathologist”, Jean Baptiste de Sénac (1693-1770) and Robert Adams (1791-1875) were the first ones to assume correlation between “rebellious palpitation” and stenosis of the mitral valve. It was William Withering (1741-1799) in 1785 who carved the first spear from foxglove leaf to curb atrial fibrillation and bring peace to fibrillating atria. The first human ECG depicting atrial fibrillation was published by Willem Einthoven (1860-1927) in 1906 without recognizing its true nature. In 1910, Lewis in London and Rothberger and Winterberg in Vienna established atrial fibrillation as a clinical entity.

Atrial fibrillation (AF) is a common cardiac rhythm disturbance and increases in prevalence with advancing age. The mechanisms causing and sustaining AF are multifactorial, and AF have been complex and difficult for clinicians to manage. AF symptoms range from non-existent to severe. Frequent hospitalizations, hemodynamic abnormalities, and thromboembolic events related to AF result in significant morbidity and mortality. AF can be potentially fatal when complicated with a decompensating heart failure in HOCM or severe AS, or when rapid ventricular rates degenerate into VF, especially with WPW syndrome. Relative inefficacy of drugs for cardioverting acute AF to sinus rhythm and at times presentation with hemodynamic compromise led to electrical cardioversion as the only available means in minds of clinicians for many years. The chemical isolated from extracts of Ammivisnaga made its knock in 1970s as antiarrhythmic drug after initial inception as a drug for angina pectoris; we now know by this as amiodarone. Antiarrhythmic drugs (amiodarone, dronedarone, procainamide, dofetilide, vernaklant, ibutilide) have been used for conversion of AF to sinus rhythm or to facilitate electrical cardioversion. Issues pertaining to anticoagulation further complicates management of patients with acute AF.

In this special supplement we talk about epidemiology, pathophysiology, clinical spectrum and management of acute AF with a special mention of ibutilide, the latest tool to cardiovert acute AF, being launched in India. With variable efficacy rates reported in literature, ibutilide converts upto 60% of recent onset AF with 3-4% patients developing torsade due to signature QTc prolongation of it being a class III agent. The pharmacology of ibutilide with respect to its role in acute AF is described by Kartikeya Bhargava K.

This is preceded by a contributions from Aditya Kapoor and Deep Raja describing epidemiology of AF from the Indian perspective. Despite the overall prevalence and incidence of AF being higher in developed nations, the rising incidence of AF in developing nations is noteworthy. Indian patients with AF are a decade younger and rheumatic valvular heart disease is the underlying etiology in ~ 30-40% cases.

This is followed by a discussion of clinical spectrum of acute AF by Parag Barwad, Mayank Singhal and Yashpal Sharma, addressing vital issues like clinical presentation and various disease associations and setting wherein acute AF presents. Ashish Nabar and Irshad Pathan throw light on pathophysiology of acute AF, describing the structural alterations developing in fibrillating atria and the electrical remodelling at the level of ion channels leading to sustenance of AF. They also cover an important issue of tachycardiomypathy where the role of prompt cardioversion to sinus rhythm is crucial to reverse the LV dysfunction. Narayan Namboodiri and Abhilash SP discuss the assessment and step-wise management of acute AF. They highlight the inferiority of presently available drugs in comparison to electrical cardioversion and hence an increasingly felt need of another more efficacious drug.

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