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The Dual Face of Amiodarone: Efficacy, Risk, and Need for Vigilant Monitoring

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Abstract: *Amiodarone is one of the most potent and widely used multi-channel antiarrhythmic drugs for the management of both supraventricular and ventricular arrhythmias. Originally developed as an anti-anginal agent, it has evolved into a cornerstone therapy for atrial fibrillation, ventricular tachycardia, and ventricular fibrillation. Its broad therapeutic utility is attributed to its unique pleiotropic mechanism of action, incorporating properties of all four Vaughan Williams antiarrhythmic classes. Despite its clinical efficacy—especially in patients with structural heart disease and reduced ventricular function—Amiodarone remains limited by its highly complex pharmacokinetics and large volume of distribution, resulting in prolonged half-life and extensive tissue accumulation. These characteristics underpin several dose- and duration-dependent toxicities, including pulmonary fibrosis, thyroid dysfunction, hepatotoxicity, ocular changes, dermatologic effects, and significant drug interactions. This review systematically synthesizes evidence on Amiodarone's pharmacology, clinical efficacy, toxicity profile, and monitoring requirements. Emphasis is placed on understanding its therapeutic benefits in relation to the need for vigilant, long-term surveillance to minimize severe adverse outcomes. Overall, Amiodarone remains indispensable in contemporary cardiology, but its safe use demands careful patient selection, strict monitoring, and awareness of its multisystem risks.*

Keywords: Amiodarone; Antiarrhythmic drugs; Pharmacokinetics; Pharmacodynamics; Supraventricular arrhythmias; Ventricular tachycardia; Multichannel blockade; Toxicity; Pulmonary toxicity; Thyroid dysfunction; Monitoring

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