



8. INCIDENCE, RISK FACTORS, AND COMPLICATIONS OF CARDIOVASCULAR SYSTEM IN PATIENT WITH GRAVES DISEASE

Author: Saravanane Essaimathi

Scientific advisor: Rizov Cristina, MD, PhD, Associate Professor, Department of Endocrinology, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Graves' disease, a common autoimmune illness characterized by a rise in thyroid hormone production, has been widely researched in terms of its effects on the thyroid gland. However, a new study emphasizes the necessity of understanding the complex link between Graves' illness and cardiovascular health. While thyroid problems are the most common symptom of this disorder, there has been increasing recognition that the impact extends beyond the endocrine system.

Aim of study. Literature review of PubMed citations of patients with GD from 2009 to 2019 was included in the research and Temporal Dynamics of Atrial Fibrillation in Graves' Disease: A Retrospective Analysis (2009–2019) and other related articles

Methods and materials. Literature review of PubMed citation, patients with GD from 2009 to 2019 were included in the research. And Temporal Dynamics of Atrial Fibrillation in Graves' Disease: A Retrospective Analysis (2009–2019).

Results. The review of the publications and article shows that Heart failure occurred in 74 out of 1371 GD patients, representing 5.4% of the total. Further breakdown: 31 (2.3%) had heart failure with reduced ejection fraction (HFrEF), and 43 (3.1%) had heart failure with preserved ejection fraction (HFpEF). Atrial fibrillation (AF) and thyroid-stimulating hormone receptor antibody (TRAb) levels were identified as independent risk variables for HFrEF. Hazard Ratio (HR) for AF: 10.5 (3.0-37.3), $p < 0.001$. HR for TRAb level: 1.05 (1.01-1.09) per unit, $p = 0.007$. These findings suggest distinct risk factors and outcomes for HFrEF and HFpEF in GD patients. AF and TRAb levels were specifically associated with HFrEF, while factors such as COPD, aging, visible hyperthyroidism, higher BMI, and elevated blood pressure were linked to HFpEF. Both types of HF were associated with an increased risk of cardiovascular illness, but only HFrEF was linked to a higher risk of all-cause death. The overview of the report of an article state identified atrial fibrillation (AF) in 139 Graves' disease (GD) patients from 2009 to 2019, with 23.0% representing late-onset AF and half obtaining euthyroid. Early AF risk factors include age, overt hyperthyroidism, and male sex. Late AF is connected with aging, chronic obstructive pulmonary disease, and heart failure. Even after correcting for age, gender, and pre-existing AF, AF in GD was connected to increased mortality, acute coronary events, and cardiac hospitalizations. The findings underscore the necessity of cautious treatment and risk assessment in GD patients with AF.

Conclusion. Graves' disease (GD) patients face a 5.4% incidence of heart failure, with distinct risks for heart failure subtypes. Atrial fibrillation (AF) and thyroid-stimulating hormone receptor antibody (TRAb) levels are notable risk factors, particularly for heart failure with reduced ejection fraction (HFrEF). AF in GD is associated with heightened mortality and cardiovascular events, emphasizing the need for precise management strategies.