



HYPOTHYROIDISM

Risk factors for death in patients with myxedema coma

BACKGROUND

Hypothyroidism is common, affecting 5-10% of the population. Myxedema coma is a rare medical condition that is the extreme manifestation of severe hypothyroidism. This occurs most frequently in the elderly and in the winter and is usually triggered by stressful events like infections and myocardial infarction. It is a medical emergency, usually managed in intensive care units and associated with increased risk of death. Patients in myxedema coma present with very low body temperature, slow heart rate, low blood pressure, change in mental status/unarousable and other symptoms related to poor function of many organs. If not treated promptly, many patients do not survive.

Our current state of knowledge and treatment recommendations about myxedema coma is based on clinical case reports and studies with small number of patients. In this study, the authors have used the information from national inpatient database in Japan, to provide a larger number of cases. The aim of this study was to identify the factors that may increase the risk of death for the patients hospitalized for myxedema coma.

THE FULL ARTICLE TITLE

Ono Y et al. Clinical characteristics and outcomes of myxedema coma: Analysis of a national inpatient database in Japan. *Journal of Epidemiology*; January 5, 2017.

SUMMARY OF THE STUDY

Patients with myxedema coma were identified in national inpatient database by diagnostic codes used by physicians treating patients in hospitals. A total of 1042 hospitals were identified providing data regarding myxedema coma. Patients admitted to hospitals from 2010 to 2013 were included in the study. Information about age, sex, season,

Japan Coma Scale score at admission and treatment modalities were obtained, including the use of mechanical ventilation, the use of catecholamine medications to treat low blood pressure and the use of glucocorticoids and thyroid hormone. Additionally, data about other medical disorders like different forms of heart conditions and rate of death occurred during hospitalization was gathered.

Approximately 19 million hospital admissions were recognized during the study period of which 149 were for myxedema coma. The average age of patients with myxedema coma was 77, 2/3rd of patients were females and highest number of patients were admitted in winter months. Overall 29.5% of patients died while in hospital. The overall frequency of myxedema coma in the Japanese population was estimated to be 1.08 per million people per year. Patients who were older and required treatment for low blood pressure with catecholamine medications had the highest death rate while in hospital.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In summary, this study showed that myxedema coma in Japan is indeed rare, affecting ~1 patient/million people. Almost 30% of patients with myxedema coma will die and the chance of dying from is higher for patients who are older and treated with catecholamine medications for low blood pressure. This study provides knowledge about the most vulnerable patients at risk of death due to myxedema coma.

— Shirin Haddady, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism (Underactive): <http://www.thyroid.org/hypothyroidism/>

ABBREVIATIONS & DEFINITIONS

Myxedema Coma: a medical emergency and complication of severe hypothyroidism triggered by other events like infection, causing malfunction of other organs; some of the symptoms may include low body temperature, slow heart rate, change in mental status.

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.



HYPOTHYROIDISM, continued

Steroids/Glucocorticoids: general anti-inflammatory and immunosuppressive drugs that are commonly used for the treatment of many autoimmune diseases associated with inflammation.

Catecholamines: Group of hormones released by adrenal gland to increase blood pressure, heart rate and alertness. In hospital, the catecholamine medications are used for treatment of low blood pressure in patients in intensive care units.

