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Impact of hypothyroidism on occurrence and outcome of acute coronary syndrome: A retrospective analysis from a large inpatient database**Rashmi Dhital, Dilli Ram Poudel and Sijan Basnet**
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Background: Coronary heart disease (CHD) is the leading cause of heart disease in the US and a significant contributor to mortality. Thyroid hormones have a profound effect on the cardiovascular system. We studied a US national inpatient database to assess the association of hypothyroidism with prevalence of and outcome among acute coronary syndrome (ACS) subgroup of CHD patients.

Methods: We used data from National Inpatient Sample (NIS), which contains \approx 20% sample of all US hospitalizations. We studied thyroid profile in relation to prevalence of CHD and its impact on outcomes (mortality, length of stay and cost incurred) in hospitalized ACS patients.

Results: Although hypothyroidism was associated with an increased CHD (OR: 1.02, 95% CI 1.007-1.025, $P < 0.0001$), the odds of developing ACS in these CHD patients was lower in hypothyroid group (OR: 0.70, 95% CI 0.69-0.71, $p < 0.0001$), after adjusting for multiple traditional risk factors. Hypothyroid ACS patients also had decreased in-hospital mortality (OR: 0.86, 95% CI 0.83-0.88, $p < 0.0001$), shorter length of stay by 0.1540771 days, ($p < 0.0001$) and lower mean hospitalization cost by US \$ 2546.432 ($p < 0.0001$), compared to ACS patients with normal thyroid profile.

Conclusion: Hypothyroidism appears to have an increased CHD risk. However, the development of ACS in these hospitalized CHD patients as well as ACS associated mortality may be lower in hypothyroidism. Further studies will help to confirm association and formulate specific management recommendations.

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