

Mortality and Cardiovascular Risk in Patients with Normal Thyroid Function

Pereg, David¹; Hermoni, Doron²; Lishner, Michael³; Mosseri, Morris³

¹Meir Medical Center, Kfar-Saba, Israel; ²Sharon-Shomron District, Netanya, Israel; ³Meir Medical Center, Kfar Saba, Israel

Background: Subclinical thyroid dysfunction is associated with increased mortality and cardiovascular risk. It is unknown whether this association remains within normal thyroid function range.

Methods: The study was conducted using the computerized database of the Sharon-Shomron district of Clalit Health services. Included were subjects >40 years with normal thyroid function. We excluded patients with a history of thyroid or cardiovascular diseases or diabetes. The primary endpoints were all-cause mortality and the need for coronary revascularization with either percutaneous coronary intervention or coronary artery bypass grafting.

Results: The 31,631 participants, 65±12 years old, were divided into quintiles according to TSH levels (0.9±0.22, 1.45±0.13, 1.9±0.14, 2.4±0.19, 3.4±0.34 mIU/L). During the 8 year follow-up, 1321 (4.2%) subjects died and 1229 (3.9%) required coronary revascularization. Since male:female ratio differed significantly between the 5 quintiles, we conducted a separate analysis according to gender. Among the women, there was a progressive increase in mortality risk as TSH levels were lower within the normal range (OR 1.4, 95% CI= 1.13-1.8, P=0.003, for comparison between the fifth and first quintiles). This association remained significant following a multivariate analysis (OR=1.35, 95% CI= 1.08-1.72, P=0.01). There were no associations between TSH levels and mortality among men (OR=1.07 95% CI= 0.8-1.42, P=0.65), or with the rate of coronary revascularization in both men and women (OR=1.04, 95% CI= 0.84-1.35, P=0.6 and OR=0.98, 95% CI= 0.73-1.33, P=0.92, respectively).

Conclusions: Lower TSH levels within the normal range are associated with increased risk for all-cause mortality in women but not in men. However, unlike with abnormal TSH levels, we did not find any association between normal TSH levels and cardiovascular risk.