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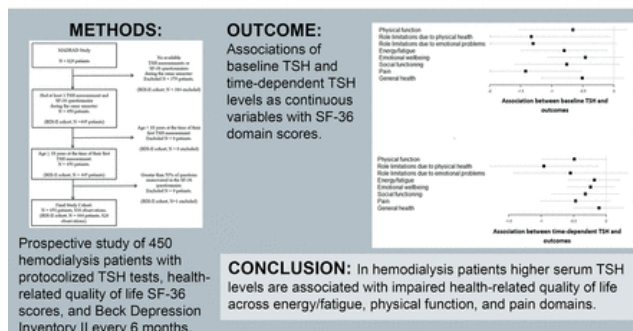
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Visual Overview

Thyroid Status, Quality of Life, and Mental
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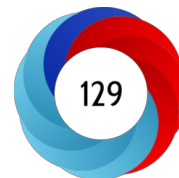
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Abstract

Background and objectives In the general population, there is increasing recognition of the effect of thyroid function on patient-centered outcomes, including health-related quality of life and depression. Although hypothyroidism is highly prevalent in hemodialysis patients, it is unknown whether thyroid status is a risk factor for impaired health-related quality of life or mental health in this population.

Design, setting, participants, & measurements We examined the association of thyroid status, defined by serum thyrotropin, with health-related quality of life and depressive symptoms over time in a prospective cohort of 450 patients on hemodialysis from 17 outpatient dialysis facilities from May of 2013 to May of 2015 who underwent protocolized thyrotropin testing, Short-Form 36 surveys, and Beck Depression Inventory-II questionnaires every 6 months. We examined the association of baseline and time-dependent thyrotropin categorized as tertiles and continuous variables with eight Short-Form 36 domains and Beck Depression Inventory-II scores using expanded case mix plus laboratory adjusted linear mixed effects models.

Results In categorical analyses, the highest baseline thyrotropin tertile was associated with a five-point lower Short-Form 36 domain score for energy/fatigue ($P=0.04$); the highest time-dependent tertile was associated with a five-point lower physical function score ($P=0.03$; reference: lowest tertile). In continuous analyses, higher baseline serum thyrotropin levels ($+1 \text{ mIU/L}$) were associated with lower role limitations due to physical health ($\beta=-1.3$; $P=0.04$),

energy/fatigue ($\beta = -0.8$; $P = 0.03$), and pain scores ($\beta = -1.4$; $P = 0.002$), equivalent to five-, three-, and five-point lower scores, respectively, for every 1-SD higher thyrotropin. Higher time-dependent thyrotropin levels were associated with lower role limitations due to physical health scores ($\beta = -1.0$; $P = 0.03$), equivalent to a three-point decline for every 1-SD higher thyrotropin. Baseline and time-dependent thyrotropin were not associated with Beck Depression Inventory-II scores.

Conclusions In patients on hemodialysis, higher serum thyrotropin levels are associated with impaired health-related quality of life across energy/fatigue, physical function, and pain domains. Studies are needed to determine if thyroid-modulating therapy improves the health-related quality of life of hemodialysis patients with thyroid dysfunction.

Podcast This article contains a podcast at https://www.asn-online.org/media/podcast/CJASN/2017_07_13_Rhee_Brent.mp3

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