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Meeting exercise guidelines is associated with improved quality of life in patients with advanced neuroendocrine neoplasms: Results from NET Voices

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BACKGROUND

Patients with neuroendocrine neoplasms (NENs) can have disease-related symptoms and treatment side effects that may affect their quality of life (QOL). Using data from NET Voices, a prospective web-based cohort of 273 patients with advanced NENs of any primary site that we previously introduced at NANETS Medical Symposium (Mulvey abstract ID 21430), we evaluated four measures of QOL and their associations with moderate to vigorous physical activity (MVPA).

METHODS

Participants completed repeated assessments of anxiety, depression, sleep quality, physical functioning, and physical activity over three e-visits spanning 18 months. MVPA was measured using a self-reported questionnaire and categorized as meeting the guideline of ≥150 minutes/week. Linear mixed-effects models were used to evaluate the associations of MVPA and clinical and demographic factors with repeated measures of QOL.

RESULTS

Among 273 participants enrolled in NET Voices to date, 120 who reported all study variables were analyzed: 76 women (63%), median age 68 years (range 38-86). A total of 7 had body mass index underweight (6%), 59 healthy weight (49%), and 54 overweight-obese (45%). There were 63 participants with histologic grade 1 (52%), 46 grade 2 (38%), and 11 grade 3 (9%). A total of 10 participants had no comorbidities (8%), 57 one to two (48%), and 53 three or more (44%). Few participants (12%) reported difficulty paying for basics. Most participants (71%) met MVPA guidelines. All four QOL scores were on average good; anxiety median was 55 [range 40-72], depression 52 [41-70], sleep 5 [0-19], and physical functioning 87 [13-100]. Higher score was worse in the former three, better in the

latter. Participants who met MVPA guidelines reported statistically significantly less depression (mean change -2.3 with 95% confidence interval [-4.4 to -0.2], p=0.035), better sleep (-1.5 [-2.8 to -0.1], p=0.035), and better physical functioning (8.2 [1.1 to 15.3], p=0.024). Models showed no evidence that anxiety was associated with MVPA (-0.7 [-2.9 to 1.6], p=0.568), but anxiety was worse among women (3.2 [0.8 to 5.5], p=0.008), participants who were younger (4.0 [1.5 to 6.6], p=0.002), underweight 6.3 [2.2 to 10.3], p=0.003), with higher grade tumor (5.8 [1.9 to 9.6], p=0.003), and who reported difficulty paying for basics 5.0 [1.8 to 8.1], p=0.002).

CONCLUSIONS

Patients living with advanced NENs who met exercise guidelines reported better QOL compared to patients who exercised less. This result is promising and paves the way for possible future exercise intervention studies and behavioral changes NENs patients might undertake to improve QOL.

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