

OP 008

THE ASSESSMENT OF HYDRATION IN ADVANCED CANCER PATIENTS USING BIOELECTRICAL IMPEDANCE ANALYSIS

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Background Current hydration assessments methods are limited in cancer patients approaching death. Bioelectrical impedance analysis (BIA) is an accurate validated method of assessing body composition; however its clinical use in advanced cancer is uncertain.

Aims To measure hydration in advanced cancer patients using BIA, in order to determine the relationship between symptoms, biochemistry and performance status.

Methods A cross-sectional prospective analysis of advanced cancer patients within a specialist palliative care unit in Liverpool, UK. BIA raw measurements, Resistance (R-Ohm), Reactance, (Xc-Ohm), total body water (TBW-through proxy measurement using height/resistance [Ht^2/R]), Phase angle (PA) and BIA vector analysis (BIVA) were used to compare for differences in hydration based on WHO performance status (0= asymptomatic, 4=bedbound), symptoms, physical examination and biochemistry.

Findings From a possible 97 patients, 78 (80%) provided consent to participate. Ht^2/R was lower in patients with a WHO performance status of 4 compared to those with a performance status <4 (mean 42.1 [SD 9.0] vs. 52.3 [14.6], $p=0.002$), and greater in those with clinically detectable oedema (mean 57 [SD 17.4] vs. 47.7 [12.4], $p=0.027$). Ht^2/R correlated negatively with thirst [$r=-0.31$, $p=0.006$], dry mouth [$r=-0.294$, $p=0.009$] and fatigue [$r=-0.285$, $p=0.011$]. BIVA showed significant difference in hydration between groups classified by the presence or absence of oedema ($p=0.03$) and dry mouth ($p=0.04$). There was no significant relationship between hydration (Ht^2/R and BIVA) vs. biochemical tests or between symptoms vs. biochemistry or performance status.

Conclusions In advanced cancer, hydration (as measured by Ht^2/R and BIVA) relates to clinically measurable signs and symptoms. Further work is needed to determine whether BIA can be used to guide the management of fluid states in advanced cancer.