The Assessment of Hydration in Advanced Cancer: The Role of Bioelectrical Impedance Vector Analysis

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BACKGROUND

- Abnormal hydration is prevalent in advanced cancer
- Current hydration assessments are subjective
- Bioelectrical impedance analysis (BIA): bedside test used to measure body composition
- BIA relies on equations: potential for error
- Bioelectrical Impedance Vector Analysis (BIVA) uses raw data
- BIVA requires further validation in clinical settings

OBJECTIVES

- Primary
  1. Determine feasibility of routine use of BIVA in assessment of hydration in Oncology inpatient admissions
  2. Evaluate patient acceptability of BIVA
- Secondary
  1. Assess correlation between hydration status on BIVA
     a) clinical assessment of hydration
     b) biochemistry
     c) hydration-related symptoms

METHODS

- Prospective observational feasibility study
- Large tertiary referral centre (St. James’s Hospital, Dublin)
- Day 1:
  - Patient demographic and medical data
  - Abridged Patient Generated Subjective Global Assessment (ab-PGSGA)
  - Blood pressure
  - Weight
- Day 2:
  - Thirst questionnaire
  - Clinical exam
  - Prevalence of ideal BIVA conditions recorded
    - Fasting x 8 hours?
    - Recent urination?
    - Lying flat?
    - Right sided electrode placement?
  - BIVA
  - BIVA Acceptance questionnaire
  - BIVA software analysis

RESULTS

Demographics

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<th>Participants</th>
<th>n = 14</th>
<th>Sex</th>
<th>M</th>
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<tr>
<td>Median Age</td>
<td>64.5</td>
<td>Range</td>
<td>53</td>
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Symptoms

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<tr>
<th>No. of Participants</th>
<th>Fatigue</th>
<th>Tiredness</th>
<th>Dry Mouth</th>
<th>Confusion</th>
<th>Full of S gala</th>
<th>No Appetite</th>
<th>Vomiting</th>
<th>Swollen Tries</th>
<th>Dumbbell</th>
<th>Muscle weakness</th>
<th>Problems swallowing</th>
<th>Pain, itching</th>
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- Median number of symptoms was 5 (range 0 - 8 of possible 13)

CONCLUSIONS

- BIVA is a novel technique for the assessment of hydration.
- It was universally accepted.
- BIVA agreed with conventional assessment for over-hydration but not dehydration.
- The ideal conditions for BIA were not met in the hospital setting, and therefore further studies are needed to assess alternative test conditions.
- Further validation is required in the hospital setting and alternative standardised techniques may need to be considered.

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