

# Frailty and subdural haematomas: implications for perioperative care

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## Background:

Frailty is a holistic concept which represents vulnerability to physiological stress, and is particularly related to age, mobility and multimorbidity. A quantitative measure of frailty, the **Frailty Index (FI)**, has previously been utilised in a population of patients with cerebrovascular disease<sup>[1]</sup>, where it was associated with poor outcomes. In this service evaluation we evaluated the frequency and relevance of frailty in a population of patients presenting with chronic subdural haematoma (cSDH) using the FI.

## Methods

Single centre approved service evaluation (PRN4279). We collected data on all adult patients presenting to a major trauma centre between March 2019 and March 2020 with a diagnosis of cSDH. FI was calculated using previously published methods<sup>[2]</sup>, where FI scores were classified accordingly:

<b>Robust</b>	<b>&lt;0.08</b>
<b>Pre-Frail</b>	<b>0.08-0.24</b>
<b>Frail</b>	<b>&gt;0.24</b>

We explored associations between FI and patient/system metrics relevant to peri-operative care.

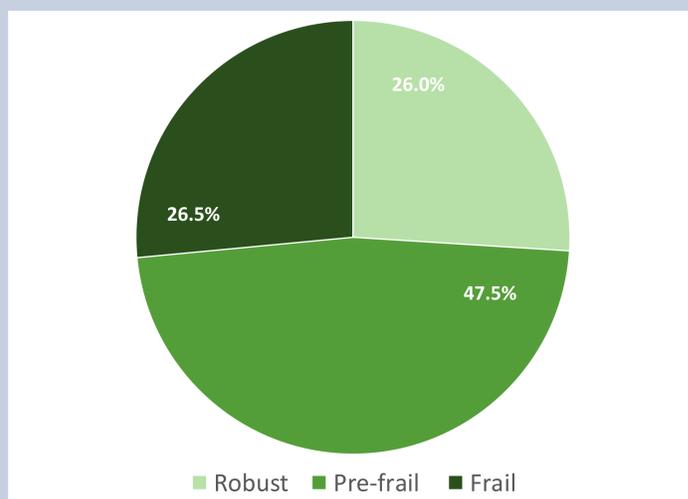


Figure 1. Frequency of frailty categories

## Use of the FI in a cSDH population

In this population, 47.5% of patients were classified as 'pre-frail' and 26.5% as 'frail' (Figure 1). FI classification was found to be independently associated with in-hospital mortality and admission to neurointensive care ( $p < 0.05$ , Fisher's exact test). However, statistically significant associations were not demonstrated between FI classification and death within 30 days of discharge, or postponement of surgery due to perioperative risk. A moderate correlation was found between FI and length of stay (LoS) (*linear regression coefficient* = 0.426,  $p < 0.001$ ), with FI explaining 18.2% ( $R^2$ ) of the variability in LoS (Figure 2). Furthermore, a strong correlation (0.460,  $p < 0.001$ ) was found between FI and the Clinical Frailty Scale (CFS)<sup>[3]</sup> (Figure 3).

## Implications:

- In this population, FI is related to patient and system metrics, such as neurointensive care admission and length of stay, which are relevant to peri-operative care
- The Frailty Index is a more objective measure of patient frailty than the CFS, and can be easily calculated using electronic patient records
- Future work should more formally examine the role of frailty in predicting these outcomes, including whether the FI is a reliable metric to triage perioperative interventions

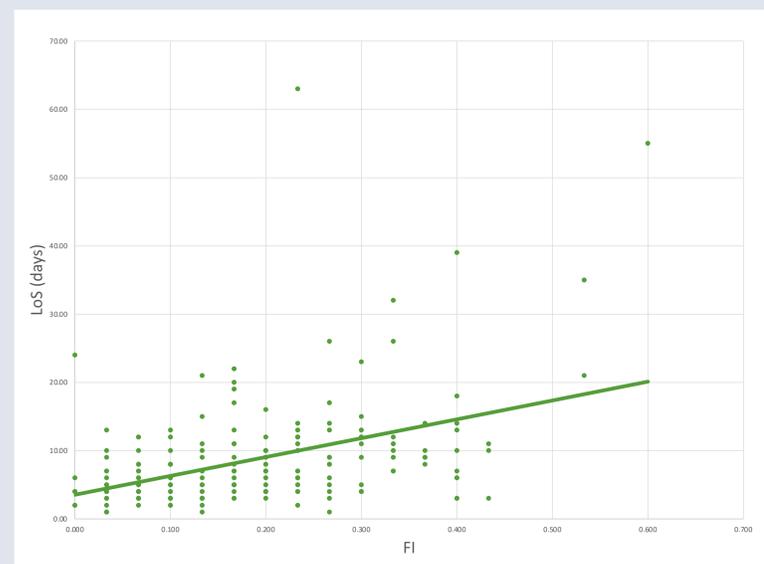


Figure 2. Relationship between LoS and FI

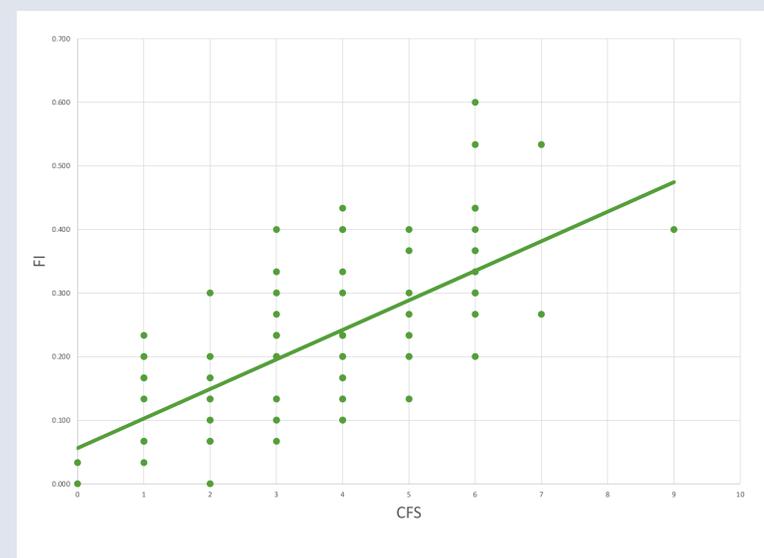


Figure 3. Relationship between FI and CFS

## References:

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3. Rockwood K, Song X, MacKnight C, Bergman H, Hogan DB, McDowell I, Mitnitski A. A global clinical measure of fitness and frailty in elderly people. *Cmaj*. 2005 Aug 30;173(5):489-95.