The Impact of Comprehensive Geriatric Assessment on the Outcomes of Older Acute Neurosurgical Patients

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Introduction:

- Increasing proportion of the neurosurgical caseload consists of older patients.
- Comprehensive geriatric assessment (CGA) is the **gold standard** for evaluating older patients.
- Orthogeriatrics and peri-operative care of older people undergoing surgery (POPS) have shown that CGA results in **fewer post-operative complications** in orthopaedic and vascular surgical patients.
- Currently, there is **little evidence** of the impact of CGA in neurosurgery.
- Aim: To investigate whether CGA for older neurosurgical patients in a London teaching hospital improves outcomes.

Methods:

1. Control group = prospective data collected for all acute neurosurgical patients over the age of 65.
2. An intervention group received CGA in the form of regular geriatric consultant reviews.
3. 49 patients were recruited into each group.

Results:

Analysis showed that the **interventional group had a significantly higher mean age and level of frailty.**

	Intervention (n = 49)	Control (n = 49)
Characteristic		
Age (years)	78.10 (7.51; 66–98)	76.89 (6.55; 66–93)
Gender, n males (%)	29 (59)	30 (61)
Co-morbidity		
Lives in own home, n (%)	46 (94)	48 (98)
Age adjusted CCI[a]	6.93 (2.77; 0-10)	4.89 (2.62; 0-15)
CCI > 5 (%)	39 (79)	34 (69)
Neurological diagnoses		
GCS < 13 on admission (%)	11 (22)	12 (24)
Vascular	4 (8)	9 (18)
TBI	37 (76)	33 (67)
Brain tumour	6 (12)	3 (10)
Other	2 (4)	3 (6)

Values are mean (SD, range) unless stated otherwise. [a] Charlson Co-morbidity Index

There were **more men than women** - a deviation to other studies where female population predominates.

Neurosurgery services should consider embedding geriatrician reviews into existing pathways.

Key findings

- Older patients constitute a major and increasing proportion of the neurosurgical workload.
- More specific diagnoses were identified by patients reviewed by a geriatrician.
- Geriatrician reviews of older neurosurgical patients may improve outcomes such as length of stay, mortality and lead to more patients being discharged home.
- This is an area where more research should take place including a formal randomised controlled trial.

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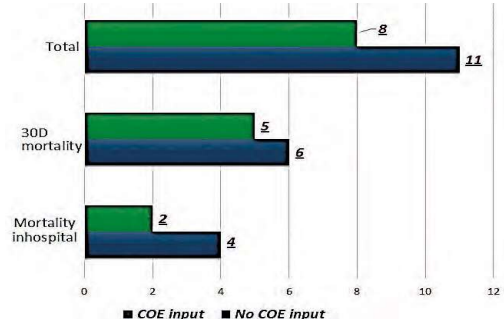
A significant difference was found in the 2 groups in terms of diagnosis of pneumonias (p=0.05) and in hyponatremia (p .015). .

	No geriatrician input	Geriatrician input	P value
Pneumonia	6	18	0.05
ACS	1	1	1
Arrhythmia	6	8	0.564
HF	5	7	0.538
UTI	11	17	0.180
PE	2	1	0.558
Urinary ret	3	7	0.182
AKI	11	11	1
Delirium	16	18	0.567
<Na	6	16	0.015
>Na	9	3	0.064
<K	6	9	0.400
>K	2	5	0.239
Sepsis	8	3	0.110

Could a decrease in sepsis in the post-intervention group be due to better diagnostic process?

The **30 day mortality was lower** (p=0.749) as well as inpatient mortality (P=0.39) compared to the control group, but did not reach statistical significance.



Average length of stay was 2 days shorter but did not reach statistical significance (p=0.701).

Fewer patients discharged to their local hospital, with more going home directly (p=0.209).