Prehospital Diagnostic Accuracy and Outcomes in Suspected Spontaneous Intracranial Haemorrhage Requiring Prehospital Emergency Anaesthesia (PHEA)

William Neale[1*], Halden Hutchinson-Bazely[1], Jordan Van Noortwijk[1], Kate Lachowycz[1], James Price[1,2], Ed Barnard[1,2,3]

[1] Research, Audit, Innovation, and Development (RAID), East Anglian Air Ambulance, Helimed House, Norwich, UK
[2] Emergency & Urgent Care Research in Cambridge (EUReCa), PACE Section, Department of Medicine, Cambridge University, Cambridge, UK
[3] Academic Department of Military Emergency Medicine, Royal Centre for Defence Medicine (Research & Clinical Innovation), Birmingham, UK

East Anglian Air Ambulance
Research, Audit, Innovation & Development Group
Improving patient outcomes

Introduction

Spontaneous non-traumatic intracranial haemorrhage (SNT-ICH) is a life-threatening emergency. Pre-hospital diagnosis is challenging. Accurate diagnosis is important to allow rapid treatment and not to overwhelm regional centres.

Methods

Three-Year Retrospective Review

April 2021 — March 2024

102 Total Patients Included

Adult patients receiving prehospital emergency anaesthesia (PHEA) for suspected SNT-ICH attended by EAAA critical care teams.

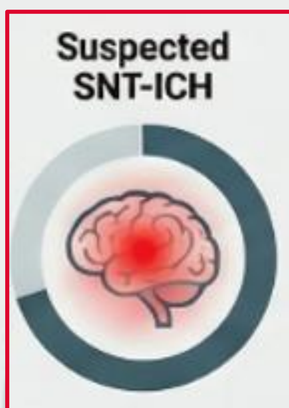
Median Patient Age: 59

Typical demographic requiring urgent intervention.

Results:

Diagnostic Accuracy & Triage

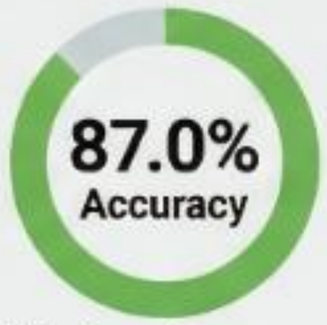
Suspected SNT-ICH



71.9% Confirmed Diagnosis Rate

Of 89 patients with follow-up, SNT-ICH confirmed via hospital CT in 64 cases.

Specialist Triage (Neuroscience Centre)

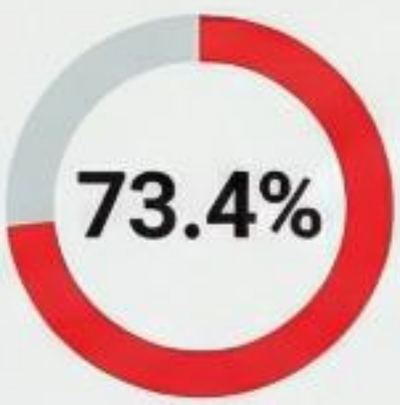


High diagnostic accuracy for patients taken directly to neuroscience centres.

Local Hospital Triage

Lower diagnostic accuracy for patients transported to nearest local hospital.

Clinical Outcomes & Mortality



Total Mortality

High mortality underscores severity of SNT-ICH, regardless of destination.

Neuroscience Centre (n=23)	Local Hospital (n=66)
56.6% Mortality Rate	**66.7%** Mortality Rate

Difference not statistically significant (p>0.05).

Secondary Transfers Required

Ten patients initially taken to local hospitals required subsequent transfer to a neuroscience centre for specialist care.

Conclusion:

Current reliance on clinical assessment alone presents a challenge, novel point-of-care tools and biomarker analysis is needed to improve early identification and triage.

Contact:
William Neale, liam.neale@eaaa.org.uk

East Anglian Air Ambulance