Novel Use of SecurAcath® for Securing External Ventricular Drains in Adults: A UK Pilot Study

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Disclosure

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• RKM has a consulting contract with Stryker

• No further disclosures
Problems with securing EVDs

- EVDs currently secured at skin exit with silk sutures or staples/clips
- Current techniques vulnerable to dislodgement, poor hygiene and can cause patient discomfort
- Can lead to:
  - additional surgical procedures
  - infection – ventriculitis (50% mortality)
  - patient distress

Study Objective: To assess if SecurAcath® is a safe and suitable device for securement of external ventricular drains to prevent dislodgement
Methods

• **Study design:**
  – prospective
  – non-randomised
  – observational cohort trial

• **Participants:** 30 adult patients requiring acute CSF diversion via EVD

• **Study Period:** 11th March – 27th October 2019

• **Intervention:** SecurAcath® devices to be used to secure EVDs in adults for acute CSF diversion

• **Excluded:**
  – <18 years old
  – previous intracranial infections (excluding presenting episode)
  – previous scalp surgery
Results

Mean Age: 54.9 years (Range: 22-82 years)

n = 31

1 excluded (scalp surgery)

n = 10 Subarachnoid Haemorrhage
n = 6 Intracerebral Haemorrhage
n = 4 Infection (empyema/abscess/CSF)

n = 3 Intraventricular Haemorrhage
n = 3 Cerebellar Infarction
n = 4 Other
Results – SecurACath Complications

- n = 30 Participants
  - n = 26 No Complications
  - n = 4 Complications
    - n = 3 Device Indwelling
    - n = 1 Post Device Removal

Mean EVD insertion length: 6.7 days (Range 1-12 days)

Complication rate 13.3%
SecurAcath® Complications and Implications ($)

We also performed a retrospective study to assess complication rate of securing EVDs using silk/staples.....
Complications – Silk sutures/staples

- n = 30 Participants
  - n = 23
    - No Complications
  - n = 7
    - Complications*
      - n = 7
        - EVD Indwelling

*1 Dislodged EVD, 1 EVD snap, 2 CSF leak, 1 ventriculitis, 2 EVD blockage

Complication rate 23.3%
(vs. SecurAcath®: 13.3%)
p = 0.317
Summary

• First study in the world using SecurAcath® in adults for the securement of EVDs

• Our experience shows minimal training and practical change to existing practices

• SecurAcath® is an effective method of EVD securement with an acceptable complication rate
Discussion

• SecurAcath® may have a lower complication rate than current methods using silk sutures and staples/clips

• Reduced complication rates of securement can result in reduced patient morbidity and healthcare cost savings

• Further, prospective comparative studies are required to prove benefit over existing methods of securement