Nursing Management of EVD

Start Of Shift Checks –

- **Visually Check** Drain connections are secure
- **Check** Drain clamps and adjustable cord that keep drain in position, and thats its on **dedicated** IV Pole – not to be used for infusion etc.
- **Check** level of drain **using the spirit level** –' Zero ' point is level with the middle of the patients ear (External Audible Meatus or **EAM**)
- **Check and Document** prescribed pressure (Prescibed by Neuro Surg on TRAK) and that the height of Drain Chamber is set correctly on the scale (This will be cmH2O) *–height of the chamber equates to ICP –CSF drains out when ICP rises above this pressure.*

Hourly Observations

all above should be checked hourly

Neuro assessment - 1° GCS and Pupil Check (record NPI **min** 4 °)

****REPORT ANY CHANGES TO MEDICAL STAFF IMMEDIATELY**

Drain Checks

- Record Volume & Colour (Straw, Rosy, **Bloody***, Clear, **Cloudy*, Turbid***) of CSF on 24 Hour Chart
- Check and document patency – if **no drainage**, can you see level of CSF 'oscillating' in tubing? Check for kinks or taps turned to 'OFF. EVD can be momentarily lowered to check patency – **BUT SEEK ADVICE From NIC /ANP before doing this**

***REPORT NO DRAINAG-NO OSCILLATION- BLOCKAGE TO MEDICAL STAFF IMMEDIATELY ***

- Visually Check Site – To maintain asepsis, occlusive dressing should not be removed. Secure with additional dressing on top /report to ACCP. For **VAD**, is butterfly needle still in position? Any Leaks/redness/ swelling present?
- Check Drainage bag – bags should be changed when ¾ full –using strict ANTT
- Is it Mon, Wed. or Fri ? – Drain may get routinely changed by DCN ANP on unit.

ESCULATE TO MEDICAL STAFF IMMEDIATELY...

- **Drop in GCS (esp motor score) or Pupil Changes (NPI Decreasing)**
- **Drain has blocked /Not osciliating**
- **No Drainage (for 1 hour)**
- **Drainage appears as Frank Blood/Cloudy/Turbid**
- **Any signs of systemic/localised infection**
- **Excessive Drainage**
- **Leaks/redness/ swelling around insertion site**
- **Dislodgement of VAD Butterfly needle**
- **Drainage Chamber set at different level to prescribed**

To Prevent Complications – See Over Page

Ongoing Bedside Management –

- **Document on 24 hour Chart – Drainage, (Vol and Colour) Patency, Set Pressure – including when set pressure changed by Neuro during a 'Drain Challenge'**

(see EVD Workbook on Intranet for more info on 'Challenging a Drain')

- **If Patent Position Changes** , re-adjust height so that zero is level with middle of ear (EAM)
- **If Moving Or Repositioning Patient** , turn off the drain at the three way tap nearest the patient and *verbalise to others that you have done this*.
- As soon as repositioning is complete, **re-adjust height so that zero is level with EAM before** turning the drain back on.
- **Minimise time with Drain turned off – IF TRANSFERRING PATIENT to CT etc SEEK ADVICE FROM NIC OR MEDICAL STAFF**.

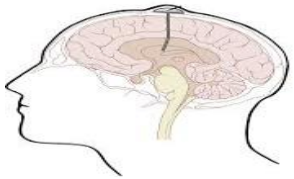
E xternal V entricular D rain

- EVD — collection device for CSF fluid drained from the cerebral ventricles .
- Diverts drainage of CSF from the ventricles once a **preset cerebral pressure** has been reached.

Will be attached to a Catheter surgically inserted into the ventricles **OR** a **VAD** (see below)

V entricular A ccess D evice

- VAD –is a soft catheter place in the lateral ventricle with a dome like reservoir at one end that sits on the outside of the skull
- It is surgically inserted into the lateral ventricle through a drilled burrhole in the skull and is'tapped' with a green butterfly needle inserted aseptically into the reservoir, allowing CSF drainage
- Stays place under the skin to be used again if required in the future.



Indications

- To temporary manage Acute Hydrocephalus
- To alleviate rises in ICP caused by obstructions to production, flow or absorption of CSF

Complications

Under Drainage - leading to deterioration in GCS/pupil changes

Possible Causes – Drain level too high; tubing kinked; dislodgement; EVD turned off for extended time; Blockage

Prevent – Hourly checks to assess height, patency, site condition etc

Excessive Drainage – can lead to collapse of ventricles and potential subdural haemorrhage

Possible Causes – Drain set too low; patient changing position; Drain slipping down IV Pole/Clamp failure; Drain not switched off during repositioning; Hypertension ++

Prevent – Hourly checks to assess height, patency, volume of drainage; etc

Infection

Prevent Maintain closed system; Observe for and report signs of sepsis; CSF sampling, and 72 hour drain/dressing changes to be performed by **trained competent practitioners only**. Drug administration is ONLY carried out by senior Drs trained and deemed competent and listed **on NHS Lothian Intrathecal Register**