Incidence of Deep Vein Thrombosis in patients undergoing Right Internal Jugular Vein cannulation for Veno-Venous Extracorporeal Membrane Oxygenation

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Published In/Presented At
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Veno-Venous Extracorporeal Membrane Oxygenation (VV ECMO) has been used more frequently for adult patients experiencing respiratory failure over the past decade. Using dual lumen cannulas through the internal jugular vein (IJV) has revolutionized another field (Fig 1). However, because of RIJ cannulation, there may be an increased incidence of right IJ DVT which result negatively for central IV access and thromboembolism in these sick patients.

**BACKGROUND**

- Veno-Venous Extracorporeal Membrane Oxygenation (VV ECMO) has been used more frequently for adult patients experiencing respiratory failure over the past decade. Using dual lumen cannulas through the internal jugular vein (IJV) has revolutionized another field (Fig 1).

**OBJECTIVE**

- Study seeks to find the incidence of DVT in the RIJ.

**METHODS**

- A retrospective study that reviewed all VV-ECMO patients recorded from 2013-2016 at the Lehigh Valley Health Network through the in-house database and EHR.

**RESULTS**

- 75% of Males ≥ 50 developed DVT (0.05 level of significance)
- 45.4% of Females ≥ 50 developed a DVT (0.2 level)
- More significant for males—lower # of endothelial progenitor cells, and increase in IJV cross sectional area
- 51.6% of patients treated ≥ 7 days developed DVT (0.05 level of significance)
  - Long periods of immobility cause improper blood flow
  - ½ of females and all males ≥ 50 and on ECMO for ≥ 7 days had DVT (0.05 level of significance)

**CONCLUSIONS**

- Large bore cannulation to the RIJ resulting in DVT is observed in less than half of patients. Of those observed, the majority were occlusive. For males age ≥ 50, and an increased duration on ECMO increases the incidence.

**REFERENCES**