**Title:** Comparison of Transradial Versus Transfemoral Access for Interventional Neuro-endovascular Procedures: A Clinical and Technical Outcome Study

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**Abstract**

*Objective:* There is a rising trend for a “radial-first” paradigm to be adopted in interventional neuro-endovascular procedures. We aimed to study the major outcomes measures of transradial access (TRA) in a tertiary neuro-endovascular center.

*Method:* From September 2020 to July 2021, 96 consecutive neurovascular interventional procedures were performed at Queen Mary Hospital. They were dichotomized into the transradial and transfemoral access (TFA) groups. Independent variables, such as baseline demographics, the use of antiplatelet or anticoagulation, sheath size, indication and setting (emergency or elective) of procedure, were collected. To achieve balance in the co-variates, propensity score matching in 1:1 ratio without replacement was performed with caliper value set at 0.2. We compared the access-site and overall complications, procedural time, technical success rate, and duration of hospital stay between the matched TFA and TRA cohorts. *Result:* Before matching, TRA patients were significantly younger (p<0.001), and were associated with substantially less emergency procedures (46.7% vs 87.9%, p<0.001). The rate of overall complications was higher in the TFA group (16.7% vs 0%, p=0.016), as was for access-site complication rate (9.1% vs 0%, p=0.098). Mean procedural time was longer in the TRA group (149 min vs 105 min, p=0.012). The technical success rate (successful cannulation of target vessel without crossover) was similar (83% vs 94%, p=0.13). After matching, 22 patients in each group was yielded. TRA group had lower rates of overall complications (0% vs 18.2%, p=0.05), and access-site complications (0% vs 13.6%, p=0.17). The mean procedural time (p=0.71) and length of hospitalization (p=0.614) was similar. The technical success rate was slightly lower than the TFA group (77.3% vs 100%, p=0.048).

*Conclusion:* Transradial access for interventional neuro-endovascular procedures was shown to have lower overall complications and a trend towards lower access-site complications, with similar procedural time and acceptable technical success rate.