Routine Versus Clinically Indicated Rotation of Peripheral Intravenous Access Based on Comfort, Cost, and Complications

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PICO Question

Among adult inpatients, how long can an asymptomatic peripheral intravenous access remain in place prior to site rotation?

Search Strategy/Evidence Appraisal

- CINHAL and PubMed were used to search for articles related to routine and clinically indicated rotation of peripheral intravenous access. A total of 31 articles were collected, 29 of these were accepted and appraised.

Evidence Summary

- The evidence revealed that there is no difference in the complication rate between routine and clinically indicated rotation. A clinically indicated rotation is safe and equivalent to a routine replacement in terms of development of phlebitis. Frequent re-sites are distressing for patients, have a significant cost component, and may lead to future venous access difficulties.
- To reduce the risk of peripheral IV catheter-related infections, place the IV catheter in upper extremities, use 2% alcoholic chlorhexidine for skin disinfection before insertion, and use intermittent flushing to maintain patency.
- For all patients who have a locked peripheral IV catheter for intermittent infusions, the site should be assessed with every catheter access/infusion or at a minimum of twice per day. When an infusion is running, it should be routinely assessed for redness, tenderness, swelling, drainage, and/or presence of paresthesiae, numbness, or tingling, at least every 4 hours.
- Infected catheters should be removed as soon as possible to prevent them from becoming a source of bloodstream infection.
- All short peripheral intravenous site dressings must be changed every 5-7 days, and more often as indicated.
- The continued need for the IV site should be examined daily, and catheters should be removed if no IV therapy is planned.
- Assessment of the site, early detection of infection, and removal of the catheter are crucial in reducing infection.

Pilot Study Results

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<thead>
<tr>
<th>Pilot Study Results</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
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<tbody>
<tr>
<td><strong>22 IV sites left in place ≥ 3 days</strong></td>
<td>22 Patients/31 IVs (9 IVs excluded)</td>
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<tr>
<td><strong>No S/S of Phlebitis!</strong></td>
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<td>Practice Change is Feasible!</td>
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Translation

- Pilot study completed utilizing recommended practice changes, and feasibility was established.
- Based on the evaluation of post translation, the electronic nursing peripheral IV documentation was re-designed to facilitate assessment, implementation, and evaluation.
- Guideline created entitled “Rotation and Assessment of Short Peripheral Intravenous Access in Adult Patients.”
- Guideline approved by the Nursing Professional Practice Council and currently awaiting final leadership approval prior to education and implementation house-wide.

Recommendation

- Based on the results of the literature analysis and pilot study outcomes, the recommendation was made to re-site short peripheral IV access only when there is a clinical indication. Additionally, implementing clinically-indicated rotation of peripheral intravenous access can decrease hospital costs and nursing task time, and improve patient satisfaction.

References

Wu, M. A., Cassile, F. (2013). In clinically-indicated replacement of peripheral catheters as well as routine replacement in preventing phlebitis and other complications. Internal and Emergency Medicine, 9(7), 445-446.