Improving AV Fistula and Graft Cannulation Practice

MAGIC: A National KQuIP Project

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KQUIP: KIDNEY QUALITY IMPROVEMENT PARTNERSHIP

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CHALLENGES OF CANNULATION PRACTICE
Discussion

1) What is good about your cannulation practice?

2) What would you like to improve in cannulation practice?

3) What do you think is the consequence of poor cannulation practice?
CANNULATION BEST PRACTICE
BRS VA and VASBI Cannulation Recommendations

Being released later this year

Incorporates:

- Buttonhole, rope ladder and area puncture cannulation
- AV grafts and fistulae
- Paeds and adults
- Existing BH recommendations

A good needling technique will:

- Minimise damage to the AV fistula / graft during needling
- Minimise complications from needling
- Minimise pain and anxiety related to needling
How to Cannulate Well

• How to insert the needle well
  – Gentle and considered insertion
  – Sure of direction and depth
  – Balance of empathy and necessity

• Technical aspects
  – Needle gauge
  – Needle direction and depth

• Procedural aspects
  – Infection control
  – Taping
Pre-Cannulation Assessment

**Arteriovenous Fistula/Graft (AVF/AVG) Pre-Cannulation Assessment Tool**

<table>
<thead>
<tr>
<th>Score</th>
<th>Signs and symptoms</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No visible signs or symptoms</td>
<td>No action required</td>
</tr>
<tr>
<td>1</td>
<td>Visible signs or symptoms</td>
<td>Monitor, do not cannulate</td>
</tr>
<tr>
<td>2</td>
<td>Significant signs or symptoms</td>
<td>Refer to Vascular Access Team</td>
</tr>
<tr>
<td>3</td>
<td>Critical signs or symptoms</td>
<td>Do not cannulate</td>
</tr>
</tbody>
</table>

**Please complete before each cannulation. Document any abnormal findings with action taken, in detail in the normal nursing documentation.**

- **AVF Score (0-3)**
- **Anastomys Present - Y/N**
- **Skin Normal (N)/Abnormal (A) / Abnormal (N) / Abnormal (L)**
- **Thrombosis (T) / Hard (H) / Soft (S)**
- **Safe to Use Y/N**
- **Initials**

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**MAGIC**

Managing Access by Generating Improvements in Cannulation

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Cannulation Techniques

• **Rope Ladder**
  - Move up the vessel in a systematic manner
  - Use as much length of the vessel as possible
    • At least 5cm per site

• **Area Puncture**
  - Shorter length than rope ladder

• **Buttonhole**
  - Cannulate in exactly the same site each time
Choosing your Cannulation Techniques

- With patients
- Length of cannulation segment
- Infection risk
  - Screening tool (Swain et al, 2017)
- Needle phobia
- Ease of cannulation
How to Avoid Area Puncture

• Avoid if possible
• Educate patients
• Educate staff
• Needling plan

• Maybe a necessary evil
  – Monitor for complications
Managing Anxiety related to Cannulation

• Used paediatric expertise

• Requires attention in adult setting
  – Tendency to ignore

• Requires further research

• Desensitisation
  – Handling the needle
  – Using the needle

• Music

• Breathing control

• Control of procedure

• Time

• Calm environment
Patient Involvement

• Involve patient’s in their VA care
  – Adult participants
  – Not telling what to do

• Involvement is more than setting up their pack and self-cannulation

• Include in all decisions
  – Starts pre-dialysis

• View needling and VA care as a partnership

• Encourage self needling

• Support required to self-needle
Other Sections

• How to do Buttonhole well
  – Track development
  – Disinfection prior to cannulation
  – Use of mupirocin on needle sites
• Summary of rope ladder procedure
• Use of nurse-led US assessment
• Cannulating new AVF / G
MANAGING ACCESS BY
GENERATING IMPROVEMENTS IN
CANNULATION (MAGIC)
MAGIC

• Quality Improvement project

• Designed by BRS VA and VASBI nurses
• KQuIIP supporting the implementation
  – Regional implementation

• Implementation of Cannulation Recommendations

Aim: To improve prevalent AVF/G rates:
• Improve cannulation to preserve AVF/G function
• Make AVF/G more attractive through better patient experience
• Develop structures to support further VA QI
Elements of MAGIC

Leadership

Needling Champion - Nurse
Nephrologist

Measurement

Monthly clinical outcomes
Run Charts
Measure impact
Guide future QI

Materials

ELearning based on Recommendations
Awareness materials for patients

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Leadership

• Nurse lead and nephrologist lead
  – Developed through KQuIP training

• Work together
  – Meet monthly

• Lead MAGIC locally

• Regional MAGIC network
  – Meet 3 monthly

• Continue doing QI following MAGIC
Measurement

- Core measurement strategy
  - Flexible local additions

- Monthly local audit
  - Collected by needling champion

- Life QI
  - Run charts / Trends

- Compare
  - Before / after
  - Regionally

Sample of Patients
- Needling technique
- Missed cannulation
- Patient experience of cannulation
  - PREM needling question

Whole Unit
- No. AVFs used for HD
- No. of AVFs lost
- No. new AVFs used
- Infection
Implementing MAGIC

- Leaders Training
- Baseline Measures
- Training Day 1 - KQuIP
- Phase 1 ELearning
- Training Day 2 KQuIP
- Phase 2 Awareness Materials
- Training Days 3 KQuIP
- Phase 3 Region designed
- Celebration event and further QI

MAGIC Network (3 monthly) + Monthly Measures
Website - [www.thinkkidneys.nhs.uk/kquip/magic/](http://www.thinkkidneys.nhs.uk/kquip/magic/)

Facebook - [www.facebook.com/groups/1918050308446120/](http://www.facebook.com/groups/1918050308446120/)

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