Procedural Sedation for Flexible bronchoscopy

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Quality & Safety in Health Care
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Background

- More than 500 patients undergo flexible bronchoscopy in Grantham Hospital (GH) each year
Background

- New procedure suite
- Shorten waiting time
- Newer instruments
- Training of bronchoscopist

Optimization of bronchoscopy performance
Background

- One important part has been missing
Background

- Patient comfort & satisfaction
Misconceptions

Misconception 1
- Chinese people are inert to pain & suffering
- Pain & suffering are inevitable during medical procedure
Misconceptions

Misconception 2

- Many of the complications associated with bronchoscopy, and up to $\frac{1}{2}$ of the life-threatening events could be attributed to sedation

Hatton MQF. BMJ 1994
Conventional pre-medication

- Conventional practice was to give a shot of pethidine (a narcotic) intramuscularly by nurse as pre-medication at ward.
Patient had to be transferred to the bronchoscopy suite by gurney, accompanied by 2 health workers, due to the side effect of light-headedness & risk of fall
Benefit of sedation

- Subsequent randomized studies have shown that sedation led to better tolerance of bronchoscopy by the patients

  Maguire GP. Respirology 1998
  Putinati S. Chest 1999
ACCP Consensus Statement

American College of Chest Physicians Consensus Statement on the Use of Topical Anesthesia, Analgesia, and Sedation During Flexible Bronchoscopy in Adult Patients

Momen M. Wahidi, MD, MBA, FCCP; Prasoon Jain, MD, FCCP; Michael Jantz, MD, FCCP; Pyng Lee, MD, FCCP; G. Burkhard Mackensen, MD, PhD; Sally Y. Barbour, PharmD; Carla Lamb, MD, FCCP; and Gerard A. Silvestri, MD, FCCP
ACCP Consensus Statement

- Equal safety record of sedation vs no sedation in bronchoscopy
- Patient’s satisfaction & procedure tolerance significantly improved with sedation
Sedation is suggested in **ALL** patients undergoing bronchoscopy unless contraindicated.
Protocol of procedural sedation for flexible bronchoscopy in GH

- Oct - Nov 2011: drafting, circulating among staff & finalization
- Dec 2011: 4 sharing sessions with nursing staff
  Why, what, how
Protocol of procedural sedation for flexible bronchoscopy in GH

- Jan 2012: Up to individual physician’s discretion: procedural sedation vs conventional pre-medication
- April 2012: Procedural sedation is used in ALL patients undergoing bronchoscopy unless contraindicated
## What have been changed

<table>
<thead>
<tr>
<th>Conventional</th>
<th>Procedural sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine given in ward by nurse</td>
<td>The sedative &amp; analgesic drugs given in the bronchoscopy suite by the bronchoscopist with titration of dose according to clinical response &amp; tolerance</td>
</tr>
</tbody>
</table>
What have been changed

- Any adverse effect due to the medication (midazolam + fentanyl or pethidine) could be recognized & handled in a timely manner.
- The dose titration approach ensures the optimal dose is given & avoids the unfavorable scenario of under/over sedation.
What have been changed

**Conventional**
- Staff of different wards are involved in handling DDA (dangerous drug administration) & record keeping

**Procedural sedation**
- Only staff of the bronchoscopy suite involved
### What have been changed

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<td>1 supporting staff &amp; 1 nurse escort the patient (after pre-medication in ward) to the suite by gurney</td>
<td>1 staff (supporting or nurse) accompanies patient to bronchoscopy suite</td>
</tr>
</tbody>
</table>
What have been changed

- The accompanying staff number is reduced from 2 to 1
- The patient transfer time from ward to bronchoscopy suite reduced as patient, not under the effect of any sedative medication, is fully ambulatory before the procedure
- Use of gurney no longer necessary
What have been changed

- A questionnaire survey was conducted on 80 patients having bronchoscopy under procedural sedation and 81 patients with the procedure done after conventional pre-medication
What have been changed

- More patients in the procedural sedation group were satisfied with the procedure (79% vs 42%)
- More patients in the procedural sedation group are willing to have the procedure repeated if need arises (71% vs 33%)
Key improvement

- Enhanced patient tolerance and satisfaction to bronchoscopy
- Enhanced patient safety
- Streamlining of logistics
- Manpower saving
Conclusion
Drawbacks

- Additional resources: venflons, syringes, NS...... for drug administration
- Additional cost for the drugs: difference of HKD 6 per patient
- Additional time: each procedure lengthened by 4 – 8 min
Conclusion
Thank you