BeQuinT Webinar

26/11/2020
Programme - jeudi 26 novembre 2020

14:00: Résultats de l’enquête nationale sur le 'Patient Blood Management' - Orateurs : Comité PBM de BeQuinT (Belgique) : Prof. dr. R. Schots, Dr. G. Hans, Dr. R. Seghaye, Mme. J. Vanden Broeck
- Organisation de la transfusion
- PBM dans le contexte peropératoire
- PBM en hémato-oncologie
- PBM en médecine interne et en gériatrie

15:30: Key Note Lecture : le PBM en obstétrique: ante-, péri-, & postpartum - Orateur : Dr. S. Pavord (Royaume-Uni)

16:00: Planification de la gestion des pénuries de sang dans les hôpitaux anglais - Orateur : Prof. dr. M. Murphy (Royaume-Uni)

Programma - donderdag 26 november 2020

14:00: Resultaten nationale 'Patient Blood Management' enquête - Sprekers: PBM Camité BeQuinT (België) : Prof. dr. R. Schots, Dr. G. Hans, Dr. R. Seghaye, Mevr. J. Vanden Broeck
- Organisatie van transfusie
- PBM in de perioperatieve setting
- PBM in hemato-oncologie
- PBM in interne geneeskunde & geriatrie

15:30: Key Note Lecture: PBM in de obstetrie: ante-, peri-, & postpartum - Spreker: Dr. S. Pavord (Verenigd Koninkrijk)

16:00: Planning voor de aanpak van bloedtekorten in Engelse ziekenhuizen - Spreker: Prof. dr. M. Murphy (Verenigd Koninkrijk)
Patient blood management
Evidence-based, multidisciplinary, patient-oriented, multimodal

Patient Blood Management
A clinical maxim to increase patient safety

- Early detection and treatment of preoperative anaemia in patients undergoing surgery with a high transfusion probability
- Minimizing blood loss and intensified use of blood conserving measures
- Rational and guideline-appropriate use of allogenic blood products

Timing
Iron
EPO

Limit blood sampling
Hemostatic agents
Cell saving

Restrictive triggers
Single unit
Optimise tolerance to anemia
Multimodal Patient Blood Management Program Based on a Three-pillar Strategy
A Systematic Review and Meta-analysis

Friederike C. Althoff,* Holger Neb, MD,* Eva Herrmann, PhD,† Kevin M. Trentino,‡ Lee Vernich,§ Christoph Füllenbach, PhD,* John Freedman, MD,¶ Jonathan H. Waters, MD,‖ Shannon Farmer, MD,***†† Michael F. Leahy, MD,¶¶ Kai Zacharowski, MD, PhD,* Patrick Meybohm, MD,* and Suma Choorapoikayil, PhD*  


• 17 PBM studies included: orthopedic, cardiac, vascular and general surgery
• Eligible studies had to address each of the 3 PBM pillars with at least one measure
• Transfusion rates reduced by 39%, saving of 0.43 RBC units per patient
• Complication rates reduced by 20%
• Mortality rate reduced by 11%
PBM survey

Overall results

R. Schots
BeQuinT projects

Quality transfusion policy (2012-2017)

- BeQuinT Steering group
- Survey quality transfusion policy
  - General
  - Prescription
  - Blood tracking
  - Hemovigilance

PBM (2018-2024)

- BeQuinT PBM Comittee
- PBM survey
  - Organisation
  - Preoperative
  - Intra- and postoperative
  - Hemato-oncology
  - Internal medicine & geriatrics
  - Obstetrics
  - Neonatology/ Paediatrics

Clinical hospital services

<table>
<thead>
<tr>
<th>Year</th>
<th>Median total score transfusion policy</th>
<th>RBC units per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>24.4</td>
<td>46</td>
</tr>
<tr>
<td>2016</td>
<td>30.6</td>
<td>36.4</td>
</tr>
</tbody>
</table>
How to understand a boxplot?

*Hospital scores are ordered from small to large:
- median = value in the middle (50% above and 50% below)
- 50% of the hospital scores between P25 and P75
Scores per chapter

Distribution of the scores on 10 (n=96)

- Organisation of PBM
- PBM in the preoperative setting
- PBM in the intra- and postoperative setting
- PBM in haemato-oncology
- PBM in internal medicine and geriatrics
- Total
Organisation transfusion/PBM

Results and recommendations
J. Vanden Broeck
Closing the gap between theory and practice
Results chapter “Organisation of PBM”

1. Organisation
2. Procedures
3. Data > information
4. Informed consent
5. PBM education
1. Organisation (Q1, Q4)

72.9% of hospitals: **PBM on the agenda** of

- Transfusion Committee
- PBM Committee / working group

7.3% have staff with dedicated time for PBM (7/96)

38.9% PBM initiatives in their **annual action plan**
1. Organisation - Transfusion Practitioners (Q6-8)

- In **88.5%** of hospitals a TP is appointed  
  (2016: 92.5%, 2014: 80%)

- Hospitals with TP (n=85):
  
  ![Box plot diagram]

  29 hospitals have a TP with allocated time to work on PBM
1. Organisation (Q9)

Disciplines in which hospitals have already implemented PBM-related initiatives (%; n=96, multiple answers)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperatively</td>
<td>51.0</td>
</tr>
<tr>
<td>Intraoperatively</td>
<td>52.1</td>
</tr>
<tr>
<td>Postoperatively</td>
<td>34.4</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>32.3</td>
</tr>
<tr>
<td>Haematology and/or oncology</td>
<td>33.3</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>29.2</td>
</tr>
<tr>
<td>Neonatology and/or paediatrics</td>
<td>13.5</td>
</tr>
<tr>
<td>Other</td>
<td>18.8</td>
</tr>
<tr>
<td>No PBM initiatives (yet)</td>
<td>29.2</td>
</tr>
</tbody>
</table>

Des initiatives pareilles ne sont pas encore mises…

[Image of bar chart showing the distribution of disciplines where PBM-related initiatives have been implemented]
1. Organisation (Q11)

**Local constraints for successful implementation of PBM programme (%)**

- More training needed for clinicians to commit to PBM
- Lack of engagement of clinicians
- Difficult process to implement change
- Executive Board does not consider PBM to be a priority
- Improvements to IT systems needed
- No reimbursement of IV iron therapy for preop. anaemia
- Need for closer links with primary care for preop. anaemia
- Need for more resources, e.g. money, time and staff
2. Procedures (Q13)

- 72.9% (70/96) of hospitals have a written procedure about massive hemorrhage.

Where is this procedure applied?

(%, n=70, multiple answers)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Theatre</td>
<td>88.6%</td>
</tr>
<tr>
<td>Emergencies</td>
<td>90.0%</td>
</tr>
<tr>
<td>Delivery ward</td>
<td>52.9%</td>
</tr>
<tr>
<td>Intensive Care</td>
<td>81.4%</td>
</tr>
<tr>
<td>Other</td>
<td>14.3%</td>
</tr>
</tbody>
</table>
2. Procedures (Q15, Q20)

**Single-unit transfusion policy**

**NHS (UK): Exceptions:**
- Major bleeding,
- Chronic anaemia requiring regular RBC transfusion

**NHS (UK): “Don’t give 2 without review”:**
- Transfuse 1 unit at a time & reassess Hb and patient’s clinical state before further transfusion

**Blood sample**

**Pretransfusion tests**

**Selection RBC**

1 Prescription

44.8% (43/96) have written procedure

**Single-unit distribution policy**

1 Distribution @ blood bank

Applied by 90.6% (87/96)

* Systematic Review (Shih, Transfusion 2018): 7 retrospective cohort studies: RBC use ↓ by 10 to 41%
2. Procedures (Q15, Q20)

Single-unit transfusion policy

44.8% (43/96) have written procedure

Limited to certain care units: n=8, absolute numbers, multiple responses

<table>
<thead>
<tr>
<th>Department</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive care</td>
<td>4</td>
</tr>
<tr>
<td>Hemato-oncology</td>
<td>7</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>3</td>
</tr>
<tr>
<td>Maternity</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

Hospital-wide: n=35
3. Data > information (Q23-26, Q28)

- 44.8% evaluate PBM initiatives min. 1x a year based exports of (electr.) patient record

  ⇒ Mostly data export from BB and laboratory information syst., mostly on blood use & wastage

- 30.2% have an electr. prescription for blood comp. (CDSS: 10 hosp) (2016: 15%, 39% in preparation)

- 51.0% have an electr. blood tracking system with scanning (BB > transfusion) (2016: 25%, partial: 41%)
### 3. Data > information (Q27)

Data systematically collected, analysed and monitored in the hospitals* (% n=96, multiple answers)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Tx per hospital clinical services</td>
<td>68.4</td>
</tr>
<tr>
<td>Number of Tx per type of surgery</td>
<td>6.3</td>
</tr>
<tr>
<td>Number of single unit RBC Tx</td>
<td>30.5</td>
</tr>
<tr>
<td>Number of Tx according to pre- and post-Tx Hb</td>
<td>17.9</td>
</tr>
<tr>
<td>Benchmarking of prescribers of blood components</td>
<td>16.8</td>
</tr>
<tr>
<td>Other</td>
<td>8.3</td>
</tr>
<tr>
<td>None of these</td>
<td>25.3</td>
</tr>
</tbody>
</table>

*Tx = Transfusion
4. Informed consent (IC) (Q29-32)

IC described in written procedure in 75.0% (92/96) of Belgian hospitals

⇒ 84.7% (61/72) describes whose responsibility it is

⇒ 56.9% (41/72) describes duration of the validity of IC
5. PBM related education programmes (Q33-35)

Topics covered during PBM training courses in hospitals that organise at least once a year a specific training course dedicated to PBM (%, n=18, multiple answers)

- Preoperative screening and management of anaemia: 27.8%
- Use of blood saving techniques: 33.3%
- Use of haemostatic drugs: 16.7%
- Transfusion triggers and targets: 83.3%
- Indications for transfusion: 77.8%
- Risks and benefits of transfusion: 83.3%
- Volume of blood samples (analysis to avoid iatrogenic anaemia): 22.2%
- Procedure for massive haemorrhage: 55.6%
- Use of the cell saver: 27.8%
- Other: 5.6%
Recommendations
1. Embed PBM in your hospital

1. Include PBM initiatives in agenda Tx/PBM committee and start/continue implementation

2. Include PBM initiatives in annual action plan

3. Include extra clinicians and supporting staff (ad hoc) for implementation of PBM initiatives

4. Engage Transfusion Practitioners to support the realisation of PBM initiatives
Your own multiannual plan - create short-term wins of PBM

- PBM implementation = at risk of losing momentum without short-term goals

- Short-term wins = “low hanging fruits”:
  - Implemented within a reasonable time frame (3 to 12 months)
  - Inexpensive, easy to understand, visible to many with little room for failure

Examples:
- Minimal blood sampling to avoid iatrogenic anaemia
- Evidence-based transfusion triggers and single-unit (prescription) policy RBC
- Massive haemorrhage/transfusion protocol
- Map out preop. care pathways and identify possibilities to start with anaemia screening

Communicate, empower and network

- **Communicate** PBM concept & beneficial effects on patient safety and outcome to all stakeholders.

- **Appoint** PBM team leaders and define clear roles and responsibilities\(^1\)

  (*Advanced level: staff (medical/nursing/Transfusion Practitioner) with dedicated time*)

- **Identify and quickly** remove or bypass obstacles (*structural, cultural and psychological barriers*)\(^1\)

- **Collaborate in hospital networks** to share practice and eventually create joint PBM programs\(^1\)

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2. Incorporate PBM in local procedures

Make a procedure about massive hemorrhage
single-unit transfusion policy of RBC

+ Engage senior clinicians & clinical 'champions'
+ education
+ audit & feedback

Recommended:
- as part of Choosing Wisely from Canadian Society for Transfusion Medicine, American Society of Hematology, and American Association of Blood Banks
- in National Patient Blood Management Guidelines of National Blood Authority Australia

“Being prepared for PBM includes having policies which support the principles of PBM”

1M. F. Murphy et al. (2014). 2013 National PBM Survey Report. NHS Blood and Transplant
3. Collect & evaluate data on PBM and show them to stakeholders

1. PBM related **baseline data**: to create momentum for change (sense of urgency)

   *Next level*: benchmarking by department, physician

2. *Next level*: improve the **hospital information systems** (blood bank, lab, anesthesiology,... inf. syst.) to increase data collection in an efficient and user-friendly way
Data > information > knowledge

Western Australia PBM Program


⇒ Image from presentation K. Trentino @ 1st Multidisciplinary Congress of PBM in Mexico, 24/10/'20
4. Write down concrete agreements in procedure IC

Responsibilities, duration of validity

5. Educate clinicians and other stakeholders about PBM

Not only about transfusion indications and triggers ⇒ 3-pillar concept of PBM
PBM in the perioperative setting

Results and recommendations

G. Hans
<table>
<thead>
<tr>
<th>Optimize erythropoiesis</th>
<th>Minimize blood loss</th>
<th>Manage anemia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREOPERATIVE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify, evaluate, and treat underlying anemia</td>
<td>Identify and manage bleeding risk (past/family history)</td>
<td>Compare estimated blood loss with patient-specific tolerable blood loss</td>
</tr>
<tr>
<td>Preoperative autologous blood donation</td>
<td>Review medications (antiplatelet, anticoagulation therapy)</td>
<td>Assess/optimize patient’s physiologic reserve (e.g., pulmonary and cardiac function)</td>
</tr>
<tr>
<td>Consider erythropoiesis stimulating agents (ESA) if nutritional anemias ruled out/treated</td>
<td>Minimize iatrogenic blood loss</td>
<td>Formulate patient-specific management plan using appropriate blood conservation modalities to manage anemia</td>
</tr>
<tr>
<td>Refer for further evaluation if necessary</td>
<td>Procedure planning and rehearsal</td>
<td><strong>INTRAOPERATIVE</strong></td>
</tr>
<tr>
<td><strong>INTRAOPERATIVE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time surgery with optimization of erythrocyte mass (note: unmanaged anemia is a contraindication for elective surgery)</td>
<td>Meticulous hemostasis and surgical techniques</td>
<td>Optimize cardiac output</td>
</tr>
<tr>
<td></td>
<td>Blood-sparing surgical techniques</td>
<td>Optimize ventilation and oxygenation</td>
</tr>
<tr>
<td></td>
<td>Anesthetic blood conserving strategies</td>
<td>Evidence-based transfusion strategies</td>
</tr>
<tr>
<td></td>
<td>Acute normovolemic hemodilution</td>
<td><strong>POST OPERATIVE</strong></td>
</tr>
<tr>
<td></td>
<td>Cell salvage/reinfusion</td>
<td>Manage nutritional/correctable anemia (e.g., avoid folate deficiency, iron-restricted erythropoiesis)</td>
</tr>
<tr>
<td></td>
<td>Pharmacologic/hemostatic agents</td>
<td>ESA therapy if appropriate</td>
</tr>
<tr>
<td><strong>POST OPERATIVE</strong></td>
<td></td>
<td>Be aware of drug interactions that can cause anemia (e.g., ACE inhibitor)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monitor and manage bleeding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintain normothermia (unless hypothermia indicated)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autologous blood salvage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimize iatrogenic blood loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hemostasis/anticoagulation management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Be aware of adverse effects of medications (e.g., acquired vitamin K deficiency)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximize oxygen delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimize oxygen consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avoid/treat infections promptly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evidence-based transfusion strategies</td>
</tr>
</tbody>
</table>

Goodnough LT et al. Anesthesiology 2012
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion Thresholds
  • Single unit policy
- **Preoperative PBM**
  - Screening, diagnosis and treatment of preoperative anemia
  - Cessation and reintroduction of anti-platelet drugs and anti-coagulants

- **Intraoperative & postoperative PBM**
  - Treatment of acquired coagulopathy
  - Use of anti-fibrinolytics
  - Use of cell salvage
  - Transfusion Thresholds
  - Single unit policy
**Q36: Screening for preoperative anemia**

<table>
<thead>
<tr>
<th>Written Procedure for Screening for Preoperative Anaemia Before Elective Surgery (%, n=96, multiple answers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>For All Patients</td>
</tr>
<tr>
<td>For At Risk Groups</td>
</tr>
<tr>
<td>No Written Procedure but Screening is Well Performed for Most Patients</td>
</tr>
<tr>
<td>No Procedure and No Screening</td>
</tr>
</tbody>
</table>

No Written Procedure but Screening is Well Performed for Most Patients.
## Screening for preoperative anemia: KCE guidelines

<table>
<thead>
<tr>
<th>ASA grade</th>
<th>Surgery grade</th>
<th>Intermediate</th>
<th>Major/complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA 1</td>
<td>Do not offer</td>
<td>Do not offer</td>
<td>Offer</td>
</tr>
<tr>
<td>ASA 2</td>
<td>Do not offer</td>
<td>Do not offer</td>
<td>Offer</td>
</tr>
<tr>
<td>ASA 3 or 4</td>
<td>Do not offer</td>
<td>Consider for patients with cardiovascular or renal disease if any symptoms not recently investigated</td>
<td>Offer</td>
</tr>
</tbody>
</table>
Q37: Criteria of screening for preoperative anemia

In Case of Written Procedure for “High Risk Group”:
To Which Patients Does the Screening Apply
(%, n=43, multiple answers)

- Cardiac Surgery: 44.2%
- Vascular Surgery (Arterial): 93.0%
- Major Orthopaedic: 93.0%
- Major Abdominal: 95.3%
- Thoracic Surgery: 88.4%
- Neurosurgery: 74.4%
- Other: 32.6%
Screening for preoperative anemia: KCE guidelines

**Major or complex**

- Total abdominal hysterectomy
- Mastectomy
- Endoscopic resection of prostate
- Lumbar disectomy
- Thyroidectomy
- Total joint replacement
- Colonic resection
- Radical neck dissection
- Nephrectomy
- Neurosurgery

**Expected blood loss > 500 mL**
Screening for preoperative anemia: conclusions

- The vast majority of the hospitals (> 80%) already perform very well

- A written procedure is desirable

- The KCE guidelines 2017 provide a good basis
Q38: When does the screening take place?

Timing of Screening for Preoperative Anaemia according to Local Procedure (%; n=87*)

- Before surgery
  - > 4w: 2.3%
  - 3-4w: 13.8%
  - 1-2w: 28.7%
  - < 1w: 9.2%
- Day before surgery: 1.1%
- Day of surgery: 0.0%
- No (systematic) screening: 0.0%
- Variable according to type of surgery: 6.9%
- Not described in procedure: 37.9%

* n=87 due to exclusion of 9 hospitals because they don’t systematically screen for anaemia before elective surgery.
Timing for screening: NATA recommendations

Detection, evaluation, and management of preoperative anaemia in the elective orthopaedic surgical patient: NATA guidelines


Detection of anaemia

Recommendation 1: We recommend that elective surgical patients have an Hb level determination as close to 28 days before the scheduled surgical procedure as possible (Grade 1C).

Why to screen for preoperative anemia?
Q44: Do you post-pone elective surgery in case of previously undiagnosed preoperative anemia?

n=87

* n=87 due to exclusion of 9 hospitals because they don’t systematically screen for anaemia before elective surgery
Q36: Diagnostic workup and treatment of preoperative anemia

<table>
<thead>
<tr>
<th>Written Procedure for Screening for Preoperative Anaemia Before Elective Surgery (%; n=96; multiple answers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Workup of Potential Causes of Anaemia</td>
</tr>
<tr>
<td>Preoperative Correction: Iron, EPO, Folic Acid, B12</td>
</tr>
</tbody>
</table>

- Diagnostic Workup of Potential Causes of Anaemia: 18.8%
- Preoperative Correction: Iron, EPO, Folic Acid, B12: 12.5%
Q45: Use of iv iron for preoperative anemia

Is iv Iron Used to treat preoperative anemia in your hospital (%; n=87, multiple answers)

- Yes, in most cases with anemia (> 80 %) 6.9
- Yes, including in ID without anemia 2.3
- Yes, but only in severe cases (lowest Hb level) 43.7
- No 50.6

* n=87 due to exclusion of 9 hospitals because they don’t systematically screen for anaemia before elective surgery
Q46. Obstacles to the use of iv iron in the preoperative setting

Why isn’t iv Iron used to treat peroperative anemia? (%; n=44*, multiple answers)

- No reimbursement: 36.4%
- Logistical issues: 18.2%
- Oral iron is used instead: 38.6%
- Other: 34.1%

* n=44: question only asked to hospitals that don’t administer IV iron preoperatively
Screening & treatment of preoperative anemia: Objectives

- Organize a formal screening for preoperative anaemia
  - 4-6 weeks
  - Prior to any major elective surgery
  - Threshold of expected blood loss > 500 mL
- In case of preoperative anaemia
  - Protocolize workup
  - Treatment strategy
    - iv and oral iron
    - vitamine supplementation
    - ESA (EPO)
• **Preoperative PBM**
  - Screening, diagnosis and treatment of preoperative anemia
  - Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• **Intraoperative & postoperative PBM**
  - Treatment of acquired coagulopathy
  - Use of anti-fibrinolytics
  - Use of cell salvage
  - Transfusion Thresholds
  - Single unit policy
Q48: Cessation and reintroduction of anticoagulants and anti-platelets agents

Hospitals with procedure regarding platelet aggregation inhibitors and/or anticoagulants

(%, n=96)

- Preoperative cessation and post-operative reintroduction: 54.2%
- Preoperative cessation: 22.9%
- Not described in procedure: 22.9%
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion Thresholds
  • Single unit policy
Q60: Transfusion algorithm including objective measurements for intraoperative hemorrhage?

- Yes, for most surgeries (> 80 %): 10.4%
- Yes, for certain surgeries: 18.8%
- No, not described in a procedure: 70.8%

%, n=96
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion Thresholds
  • Single unit policy
Q54: Use of Tranexamic Acid described in a written procedure?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>n=96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32.3</td>
<td></td>
</tr>
<tr>
<td>No but we use TA</td>
<td>64.6</td>
<td></td>
</tr>
<tr>
<td>No we do not use TA</td>
<td>3.1</td>
<td></td>
</tr>
</tbody>
</table>

(%, n=96)
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion Thresholds
  • Single unit policy
Q52: Written procedure for Intraoperative Blood Salvage?

- Yes: 37.5%
- No but we use intraoperative cell salvage: 41.7%
- No, we do not use intraoperative cell salvage: 20.8% (n=96)
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion triggers
  • Single unit policy
Q51 & Q70: Most applied perioperative transfusion thresholds for RBC in stable patients

(%, n=45 & 52*)

<table>
<thead>
<tr>
<th>Transfusion trigger</th>
<th>Intraoperative (n=45)</th>
<th>Postoperative (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb &lt; 10 g/dL</td>
<td>4.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Hb &lt; 9 g/dL</td>
<td>5.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Hb &lt; 8 g/dL</td>
<td>26.9</td>
<td>31.1</td>
</tr>
<tr>
<td>Hb &lt; 7 g/dL &amp; Hb &lt; 8 g/dL in case of active bleeding, hip fracture and cardiovascular disease</td>
<td>64.4</td>
<td>65.4</td>
</tr>
</tbody>
</table>

* n=45 & 52 because only 52 hospitals had a local procedure with defined trigger for intra- & post-operative transfusion of RBC
• Preoperative PBM
  • Screening, diagnosis and treatment of preoperative anemia
  • Cessation and reintroduction of anti-platelet drugs and anti-coagulants

• Intraoperative & postoperative PBM
  • Treatment of acquired coagulopathy
  • Use of anti-fibrinolytics
  • Use of cell salvage
  • Transfusion triggers
  • Single unit policy
Q71: Postoperative policy of single unit transfusion of RBC described in procedure

Yes, in general procedure regarding postop. setting: 24.0%
Yes, in procedure limited to certain wards or subgroups in postop. setting: 7.3%
No, but applied for most of patients: 43.8%
Not systematically applied for most of patients: 25.0%

(%, n=96)
Conclusions and recommendations

- Belgian Hospitals are not great fans of procedures but report fairly good clinical practices
- There is room for improvement BUT major obstacles regarding the diagnosis and treatment of **preoperative anaemia**
  - Lack of logistical resources
  - Restrictive reimbursement criteria
- Consider starting with **easy, cheap** and **well accepted** measures
  - Guiding for anti-platelets and anticoagulants
  - Intraoperative transfusion algorithms including use of TA
  - Develop the use of cell salvage
- **Single unit policy**
  - Should be the standard of care for stable patients
PBM in hemato-oncology

Results and recommendations

R. Schots
### Results Q72

#### Hospitals with hospitalisation and/or high care hemato-oncology with consultation and/or ambulatory clinic: types of functions (%; n=76, multiple answers)

<table>
<thead>
<tr>
<th>Type of Function</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalisation for standard chemotherapy &amp; supportive care</td>
<td>98.7</td>
</tr>
<tr>
<td>Acute leukaemia (long-term stay)</td>
<td>39.5</td>
</tr>
<tr>
<td>Autologous stem cell transplantation</td>
<td>30.3</td>
</tr>
<tr>
<td>Allogeneic stem cell transplantation</td>
<td>18.4</td>
</tr>
</tbody>
</table>

High Care chemotherapy
Results Q73

Procedure strategies to avoid iatrogenic anaemia in hospitalised patients

(n=76, %)

- Yes, general procedure hemato-oncology: 3.9%
- Yes, procedure limited to some units/patient groups: 1.3%
- No but implemented for most patients: 59.2%
- No: 35.5%

* n=76: question only asked to hospitals with hospitalisation and/or high care haemato-oncology
Results Q75

Procedure defining trigger of 7-8 g/dL in stable hospitalised patients (n=76, %)

- Yes, general procedure hemato-oncology: 25.0%
- Yes, procedure limited to some units/patient groups: 5.3%
- No but implemented for most patients: 64.5%
- No: 5.3%

n=76: question only asked to hospitals with hospitalisation and/or high care haemato-oncology
Stable patients after intensive cytoreduction therapies, incl. intensive chemotherapy and/or stem cell transplant.
## Results Q77

<table>
<thead>
<tr>
<th>Procedure for single unit after intensive chemotherapy (n=76, %)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, general procedure hemato-oncology</td>
<td></td>
<td>25.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, procedure limited to some units/patient groups</td>
<td>3.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No but implemented for most patients</td>
<td></td>
<td>48.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>22.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*n=76: question only asked to hospitals with hospitalisation and/or high care haemato-oncology*
Results Q79-80

% of orders with 1 unit RBC in stable patients (%, n=59)

- We can calculate it: 15.3%
- We can estimate it: 20.3%
- Not enough data available: 64.4%

Number of hospitals

% of orders with 1 unit RBC

- 0-10: 2
- 10-20: 4
- 20-30: 2
- 30-40: 1
- 40-50: 1
- 50-60: 1
- 60-70: 4
- 70-80: 2
- 90-100: 7

n=21
Results Q81-Q84

On which criteria transfusion decisions are based in ambulatory hemato-oncol. patients (estimation)?

<5% had scores for comorbidity/quality of life documented in patient record (n=96)
Conclusions/recommendations

• Hospitalised patients
  • Measures to limit iatrogenic anemia, use of restrictive triggers in hospitalized patients and single unit transfusion are implemented in most hemato-oncological units
  • Limited use of written procedures which can facilitate auditing & feedback and may contribute to further raising awareness
  • Collect data and provide feedback to the units/physicians/nurses

• Ambulatory setting
  • Document quality of life and comorbidity scores in patient file and develop procedures to transfuse accordingly
PBM in internal medicine & geriatrics (hospitalised patients)

Results and recommendations

R. Seghaye
Written procedure with strategies to avoid iatrogenic anaemia in hospitalised patients for internal medicine (%\, n=96)

- Yes, general procedure internal medicine: 2.1%
- Yes, procedure limited to certain care units or subgroup of patients: 1.0%
- No procedure but usually applied: 55.2%
- No procedure and not applied: 41.7%
Q92, Q94, Q96, Q98 - Transfusion triggers

Written procedure about transfusion trigger for RBC in stable hospitalised patients for int. med. (n=96) or geriatrics (n=95) (%)

- Yes, general procedure: 32.3%
- Yes, procedure limited to certain care units or subgroup of patients: 4.2%
- No but same trigger is systematically applied to majority: 41.7%
- No and no systematically applied trigger to majority of patients: 21.9%

Most applied trigger for RBC transfusion in stable patients hospitalised for internal medicine (n=76) or geriatrics (n=73) (%)

- < 7 g/dL: 48.7%
- < 8 g/dL: 54.8%
- < 9 g/dL: 20.5%
- < 10 g/dL: 2.7%

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Internal Medicine</th>
<th>Geriatrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 70 years</td>
<td>30.6</td>
<td>48.6</td>
</tr>
<tr>
<td>&gt; 75 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 80 years</td>
<td></td>
<td>9.7</td>
</tr>
<tr>
<td>&gt; 85 years</td>
<td></td>
<td>11.1</td>
</tr>
</tbody>
</table>
Q99 - single unit

Written procedure about single-unit policy of RBC transfusion in hospitalised patients (n=96)

- Yes, in general procedure internal medicine: 6.3
- Yes, in general procedure geriatrics: 9.4
- Yes, in general procedure for internal medicine and geriatrics: 2.1
- Yes, procedure limited to certain care units or subgroup of patients: 51.0
- No but this policy is applied to majority of patients: 31.3
- No and this policy is not applied to majority of patients: 0
Q101 - on which criteria are transfusion decisions based in geriatric patients (estimation) (n=95*)

**Predefined transfusion triggers**

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10%</td>
<td>10</td>
</tr>
<tr>
<td>10-25%</td>
<td>20</td>
</tr>
<tr>
<td>25-50%</td>
<td>30</td>
</tr>
<tr>
<td>50-75%</td>
<td>20</td>
</tr>
<tr>
<td>75-90%</td>
<td>10</td>
</tr>
<tr>
<td>&gt; 90%</td>
<td>5</td>
</tr>
</tbody>
</table>

**Geriatric assessment documented in patient record**

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10%</td>
<td>10</td>
</tr>
<tr>
<td>10-25%</td>
<td>20</td>
</tr>
<tr>
<td>25-50%</td>
<td>30</td>
</tr>
<tr>
<td>50-75%</td>
<td>20</td>
</tr>
<tr>
<td>75-90%</td>
<td>10</td>
</tr>
<tr>
<td>&gt; 90%</td>
<td>5</td>
</tr>
</tbody>
</table>
### Q102 - use of IV iron

**Situations in which IV iron therapy is commonly prescribed for inpatients (internal medicine and/or geriatrics) (%)**, n=96

<table>
<thead>
<tr>
<th>Situation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obvious malabsorption syndrome (e.g. post-bariatric surgery)</td>
<td>72.9</td>
</tr>
<tr>
<td>Resistance / intolerance to iron per os</td>
<td>82.3</td>
</tr>
<tr>
<td>Deep iron deficiency anaemia</td>
<td>67.7</td>
</tr>
<tr>
<td>Treatment of inflammatory (or cancer associated) anaemia</td>
<td>20.8</td>
</tr>
<tr>
<td>In addition to ESA based treatment</td>
<td>28.1</td>
</tr>
<tr>
<td>IV iron not used regularly in our hospital</td>
<td>14.6</td>
</tr>
<tr>
<td>Other</td>
<td>20.8</td>
</tr>
</tbody>
</table>
Q104: Why should a more extensive use of IV iron be implemented (and reimbursed) for inpatients (internal medicine, geriatric or non-geriatric patients) in order to fully support a PBM programme (n=74) ?

Arguments suggested by hospitals:

• Reduced need for transfusion

• Quicker Hb ↑ and shorter treatment period than oral iron

• Less gastrointestinal intolerance

• If complementary to ESA ⇒ efficacy of ESA ↑

• Better prognosis for patients with cardiac failure, ↘ readmissions/length of stay

• Less burden for patient, ↑ quality of life, low therapy compliance in patients with oral iron
Recommendations for hospitals

• “One bag & reassess” strategy (int. med. & geriatrics) to promote.

• Procedure about Hgb restrictive values that trigger EC transfusion (int. med.)

• Transfusion policy based on geriatric assessment (geriatrics) to promote

• Procedure about limiting excessive blood loss linked to sampling (int. med. & geriatrics)
Action points for BeQuinT

J. Vanden Broeck
Action points for BeQuinT PBM committee

1. Report on PBM survey results
2. PPT template PBM concept & current evidence beneficial effects
3. PBM webinars 4x per year
4. New webpage with PBM resources:
   - Links to international guidelines and resources to support implementation
   - Examples of procedures of Belgian hospitals validated by PBM committee
5. New workshops for Transfusion Practitioners
How to access to your individual benchmarking results?

- Digital platform PortaHealth

More details next week
Bedankt - Merci - Thank you

- You will receive an evaluation form + attest of attendance
- Accreditation points are applied for
- PDF of presentations will be published on: www.bequint.be