Improving transfusion related adverse event recognition, reporting and patient care

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Overview of the session

• Overview of Haemovigilance reporting in QLD and relationship to Standard 7- Blood and blood products

• Review of current literature of transfusion knowledge

• TPCH approach to Haemovigilance

• Patient case study
The Prince Charles Hospital

• Tertiary Referring Hospital providing health services to the Northside of Brisbane (Population ~ 1 million)

• Approximately 630 beds.

• Services include:
  ➢ Cardiac and thoracic medicine and surgery
  ➢ Emergency medicine – adults and children
  ➢ General medical and general surgical services
  ➢ Orthopaedic joint surgery (elective)
  ➢ Acute geriatrics and rehabilitative medicine
  ➢ Children’s inpatient services
  ➢ Mental Health Service
  ➢ Palliative care
The NSQHS Standards

- Standard 1: Governance for Safety and Quality in Health Service Organisations
- Standard 2: Partnering with Consumers
- Standard 3: Healthcare Associated Infections
- Standard 4: Medication Safety
- Standard 5: Patient Identification and Procedure Matching
- Standard 6: Clinical Handover
- Standard 7: Blood and Blood Products
- Standard 8: Preventing and Managing Pressure Injuries
- Standard 9: Recognising and Responding to Clinical Deterioration in Acute Health Care
- Standard 10: Preventing Falls and Harm from Falls

Haemovigilance reporting in QLD
Medical and Nursing knowledge of transfusion adverse events / Haemovigilance

- Recognition that adverse events are under reported (Linsted et al 2014, Li et al 2014)


- Limited information on adverse events from a patients perspective
## Product utilisation vs reported incidents

<table>
<thead>
<tr>
<th>Severity Assessment Code (SAC)</th>
<th>SAC 1</th>
<th>SAC 2</th>
<th>SAC 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Consequence to Patient</td>
<td>Death or likely permanent harm which is <em>not reasonably expected</em>(^\text{a}) as an outcome of healthcare. Includes but is not limited to the events listed below</td>
<td>Temporary harm which is <em>not reasonably expected</em>(^\text{a}) as an outcome of healthcare</td>
<td>Minimal or no harm which is <em>not reasonably expected</em>(^\text{a}) as an outcome of healthcare</td>
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</tbody>
</table>
| Source – ‘Reportable event’ in accordance with the: Hospital and Health Boards Regulation 2012 | - Maternal death or serious maternal morbidity associated with labour or delivery  
- The death of a person associated with incorrect management of the person’s medication  
- The death of a person, or neurological damage suffered by a person, associated with an intravascular gas embolism  
- The wrong procedure being performed on a person, or a procedure being performed on the wrong part of a person’s body, resulting in the death of the person  
- The retention of an instrument, or other material, in a person’s body during surgery that requires further surgery to remedy the retention  
- The death of a person, or an injury suffered by a person, associated with a haemolytic blood transfusion reaction resulting from the wrong blood type being used from the person during a blood transfusion  
- The suspected suicide of a person receiving inpatient healthcare  
- The suspected suicide of a person with mental illness who is under the care of a provider of mental health services while residing in the community**  
- Any other death of a person or an injury suffered by a person, that was not reasonably expected to be an outcome of the health service provided to the person  

\(^\text{a}\) ‘Not reasonably expected’ by treating clinician(s), patient or family.  
** Community suicide – level of analysis determined locally by Commissioning Authority after consultation with the relevant Mental Health Mortality Analysis Committee
Embedding Haemovigilance in culture and improving reporting culture – TPCH approach

• Use Blood safe e learning
• Nursing education
• Medical education
• Engagement of Scientific staff
• Patient engagement
• Use tools and resources
But....

- Code of conduct
- Waste Management
- Basic life support
- Infection control
- Child safety
- Fraud and misconduct
- Moving and handling
- Pressure injury prevention
- Falls prevention
- Blood safety
- Medication management
- Advanced life support

3.4% of seps / episodes receive blood products (1387/ 39720)
## Standard 7 - Blood and blood products

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>7.3.1</td>
<td>Reporting on blood and blood product incidents is included in regular incident reports</td>
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<tr>
<td>7.3.2</td>
<td>Adverse blood and blood product incidents are reported to and reviewed by the highest level of governance in the health service organisation</td>
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<td>7.3.3</td>
<td>Health service organisations participate in relevant haemovigilance activities conducted by the organisation or at state or national level</td>
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<tr>
<td>7.6.1</td>
<td>Adverse reactions to blood or blood products are documented in the patient clinical record</td>
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<td>7.6.3</td>
<td>Adverse events are reported internally to the appropriate governance level and externally to the pathology service provider, blood service or product manufacturer whenever appropriate</td>
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<tr>
<td>7.9.2</td>
<td>Plans for care that include the use of blood and blood products are developed in partnership with patients and carers</td>
</tr>
<tr>
<td>7.11.1</td>
<td>Information on blood and blood products is provided to patients and their carers in a format that is understood and meaningful</td>
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Case Study – Transfusion reaction from the patients perspective

63 year old female

Newly diagnosed resected small cell lung Ca – 1st round of chemo- curative intent

Febrile neutropenia – unwell for 5/7 with diarrhoea and vomiting/ AKI

Admitted to Ward - commenced IV Abs BC Staph Hominis @ 19.7 hours

PMH
COPD
Anxiety/ depression
### Platelet infusion

Medical Emergency Team call at 1700 for:
- Increased Respiratory Rate
- Tachycardia
- Decreased oxygen saturation

Exp wheeze bilaterally

Nil stridor- Nil angioedema.

Treated with:
- Hydrocortisone 100,
- Phenergan 25
- Adrenaline 0.3mg

- Symptoms resolved- stayed on ward

<table>
<thead>
<tr>
<th></th>
<th>1520</th>
<th>1545</th>
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<tr>
<td><strong>Baseline</strong></td>
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<td><strong>Time</strong></td>
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<tr>
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<td>18</td>
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<tr>
<td><strong>Temp</strong></td>
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<td>37.1</td>
<td>39</td>
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Investigations

- Chest X Ray – NAD
- IgA and Anti-IgA testing done after discussion with Haematologist
- Event classified as SAC 2 / Severe allergic reaction
- Patient review
The patient

- Reaction reported in incident reporting system
- Reviewed by treating team
- ARCBS notified
- Reviewed by Transfusion CNC post reaction
- Noted peanut and codeine allergy not recorded in medical notes/medication chart
- Nil transfusion history - 2 pregnancies? Relevance?
- Alerts updated in hospital systems and documented in patient medical record
- Reassured and provided patient and family with further information/options for care
The next day....

• Platelet count down to 9

• Medical decision to transfuse further unit platelets

• Patient declined further products

• Risks discussed by medical officers and acknowledged by patient and family

• Patient self discharged against medical Advice
And the next day.....
• Clinical incident reviewed by patient blood management steering committee (PBMSC)

• Questions raised......

• Could we have done anything differently?

• Did the transfusion trigger meet best practice?

• Review of severity assessment code and Committee agreement
Summary and take home messages

- Remember the patient is at the beginning of every haemovigilance report. Encourage patient involvement.

- Is transfusion knowledge a common skill?

- Improving reporting culture is hard work – is education the answer? How do we educate effectively?

- How are we doing now? What else can we do?
Questions?
References

Acknowledgments

• Ms Kylie Hobson- PBM CNC TPCH
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• Dr Joanne Perel- Haematologist- TPCH
• Ms Cheryl Kann – Blood Bank supervisor TPCH
• Patient Blood Management Steering Committee- TPCH
• Ms Natasha Keary – RBWH
• Mr Nick McKeough- GCH
• All Clinicians , Nurses and Scientists involved in PBM and Standard 7 at TPCH

References

• I, N. Williams, Lawrence, Zhou. Zhiming. Wu YanYun. (2014) Incidence on acute transfusion reactions to platelets in hospitalised paediatric patients based on the US haemovigilance reporting system. Transfusion. 54, 1666-1672