Policy

Clinical Guideline
South Australian Perinatal Practice Guidelines – maternal anaphylaxis

Policy developed by: SA Maternal & Neonatal Clinical Network
Approved SA Health Safety & Quality Strategic Governance Committee on: 10 June 2014
Next review due: 30 June 2017

Summary
Clinical practice guideline for the management of maternal anaphylaxis.

Keywords
asphyxia, therapeutic hypothermia, neuroprotection, hypothermic, hypothermic, maternal anaphylaxis, anaphylaxis, adrenaline, allergy, latex allergy, allergic reaction, anaphylactic reaction, angioedema, bronchodilators, corticosteroids, antihistamines, Perinatal Practice Guidelines, clinical guideline

Policy history
Is this a new policy? N
Does this policy amend or update an existing policy? Y
Does this policy replace an existing policy? Y
If so, which policies?
Management of maternal anaphylaxis.

Applies to
All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS
Other

Staff impact
N/A, All Staff, Management, Admin, Students, Volunteers
All Clinical, Medical, Nursing, Allied Health, Emergency, Dental, Mental Health, Pathology

PDS reference CG110

Version control and change history

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Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient’s medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements.
Maternal anaphylaxis management flow chart

Suspected anaphylaxis
Call emergency response team e.g. MET or other hospital equivalent

NO

Initial assessment for acute anaphylaxis

Consider other diagnosis

YES

Moderate-severe reaction
Give adrenaline IM

NO

Good clinical response?

YES

Consider additional management
Continue observation for 4-6 hours

 Repeat adrenaline IM
Consider Caesarean section

NO

Late phase reaction?

YES

Is patient for admission?

YES

Admit

NO

Discharge

Follow-up

Mild reaction

NO

Admit
Introduction

> Anaphylactic reactions usually begin within 5 – 10 minutes of exposure and the full reaction usually evolves within 30 minutes
> In a woman with a latex allergy, repeated vaginal examination with gloves containing latex and other exposure to latex can lead to anaphylaxis
> Prevention of anaphylaxis during pregnancy begins with a careful history to uncover any past allergic reactions that may provide clues about potential allergies to foods, medications, insect stings, latex, or other allergens

Suspected anaphylaxis

> Call the emergency response team e.g. Medical emergency team (MET) or hospital specific equivalent
> Anaphylaxis is a rapidly evolving multisystem allergic reaction involving one or more of the following systems:
  > Respiratory
  > Cardiovascular (hypotension)
  > Gastrointestinal
  > Cutaneous
> NB: Stop all suspected medications, diagnostic contrast material or infusions

Initial assessment

> Anaphylactic reactions can vary in severity, consider anaphylaxis when responses are from two or more body systems

Grade 1: Mild (allergic reaction)

> Skin and subcutaneous tissues only
  > Generalised erythema
  > Urticarial
  > Periorbital oedema
  > Angioedema

Grade 2: Moderate (anaphylaxis)

> Features suggesting respiratory, cardiovascular, or gastrointestinal involvement
  > Dyspnoea
  > Stridor
  > Wheeze
  > Chest or throat tightness
  > Nausea
  > Vomiting
  > Abdominal pain
  > Dizziness (presyncope)
  > Diaphoresis
Grade 3: Severe (anaphylaxis)

- Hypoxia, hypotension or neurological compromise
  - Cyanosis or SpO₂ ≤ 92 % at any stage
  - Hypotension
  - SBP < 90 mmHg in adults
  - Confusion
  - Collapse
  - LOC
  - Incontinence

Emergency care for moderate – severe reactions

(Grade 2-3)

- Position the woman with lateral tilt and raise legs unless vomiting. If breathing is difficult, allow the woman to sit upright
- Oxygen at > 6 L / minute (preferably 12-15 L / minute via non-rebreathing mask)
- Adrenaline intramuscular (IM) immediately injected into lateral thigh, women > 50 kg – give 0.5 mg (0.5 mL of Adrenaline 1:1,000)
- Monitoring: Continuous ECG and pulse oximetry, frequent blood pressure and respirations
- Observations should be taken:
  - a minimum of 15 minutely for first hour (to maximise the benefit and minimise the risk of overtreatment and adrenaline toxicity) and
  - then hourly for 4-6 hours post final adrenaline administration, in case of late phase reactions (biphasic reactions) which occur in 3-20 % of anaphylactic reactions

- Rapid intravenous (IV) fluid resuscitation with 0.9% sodium chloride using pressure device (20 mL / kg, i.e. 1.5 L for 70 kg woman). Repeat bolus if hypotension persists
- If poor clinical response at 5 minutes repeat IM adrenaline – consider the need for IV adrenaline infusion (see below)

Caesarean delivery

- Emergent caesarean delivery should be considered early in cases of persistent maternal hemodynamic instability despite resuscitation
- Since a stable maternal hemodynamic status during anaphylaxis does not guarantee appropriate placental perfusion and fetal oxygenation, normal fetal heart rate variability provides reassurance about fetal status. Persistent signs of fetal compromise, despite aggressive medical management are an indication for emergency delivery

Additional management

- If wheezy or peak flow > 20 % below normal:

Bronchodilators:
- Salbutamol 8-12 puffs of 100 micrograms using a spacer OR 5 mg salbutamol by nebuliser
- NB: Bronchodilators do not prevent or relieve upper airway obstruction, hypotension or shock

Corticosteroids:
- Oral prednisolone 1 mg / kg (maximum of 50 mg) or intravenous hydrocortisone 5 mg / kg (maximum of 200 mg)
- NB: Steroids must not be used as a first line medication in place of adrenaline
Antihistamines:
> Antihistamines have no role in treating or preventing respiratory or cardiovascular symptoms of anaphylaxis
> Do not use oral sedating antihistamines as side effects (drowsiness or lethargy) may mimic some signs of anaphylaxis
> Injectable promethazine should not be used in anaphylaxis as it can worsen hypotension and cause muscle necrosis
> Serum Tryptase test within 8 hours of onset if diagnosis uncertain

Admission criteria
> Consult with obstetrician / anaesthetist / intensivist
> Severe reaction with hypotension or hypoxia or need for adrenaline infusion
> Bronchospasm in context of poorly controlled asthma
> Systemic clinical features unresolved after 8 hours
> Women with a past history of protracted / biphasic anaphylaxis

Discharge
> Consider consulting Allergy Clinical Team (Allergy Clinical Nurse available at FMC and RAH in-hours)
> Refer to a Anaphylaxis Rapid Review Clinic for follow-up
> Provide individualised allergen avoidance advice
> Anaphylaxis action plan +/- EpiPen including patient education and demonstration in usage
> If there is ongoing angioedema or urticarial consider oral prednisolone 25-50 mg for 3-5 days +/- cetirizine 10 mg oral twice daily
> Ensure case note alert is present in the woman’s medical records

Follow-up – Anaphylaxis Rapid Review Clinic
> Review EpiPen education and training
> Identify trigger
> Medic-Alert (bracelet / necklace)
> Consider desensitisation treatment

Additional note on adrenaline
> Adrenaline is life-saving and must be used promptly. Withholding adrenaline due to misplaced concerns of possible adverse effects can result in deterioration and death of the patient. It is safe and effective
> Adrenaline 1:1,000 contains 1,000 microgram in 1 mL (1 mg / mL). The volumes of adrenaline recommended for adults approximate to 5-10 microgram / kg
> If adult critical care facilities are not immediately available, ensure cardiac and vital sign monitoring is undertaken while giving the following adrenaline infusion (under the supervision of the obstetrician / anaesthetist)

<table>
<thead>
<tr>
<th>Table 1: Adrenaline infusion volumetric infusion pump regimen</th>
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<tbody>
<tr>
<td>Draw up 1 mg (1 mL) adrenaline (1 ampoule)</td>
</tr>
<tr>
<td>Withdraw 1 mL from a 100 mL 0.9% sodium chloride bag and discard</td>
</tr>
<tr>
<td>Add the 1 mL of adrenaline to the bag of 0.9 % sodium chloride to make 100 mL</td>
</tr>
<tr>
<td>Using medication added label write “adrenaline 0.01 mg per mL” and attach label to bag</td>
</tr>
<tr>
<td>Start infusion at 0.5 mL / kg / hour (approximately 0.1 microgram / kg / minute)</td>
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<td>Titrated rate up or down according to response</td>
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Contact: cywhs.perinatalprotocol@health.sa.gov.au
In cases of persistent hypotension despite adrenaline infusion, consult obstetrician/intensivist/anaesthetist. Options include metaraminol or vasopressin infusion. If infusions are ineffective or impaired LV function (e.g. β blocking agents) consider glucagon 1-2 mg IV over five minutes.

Corticosteroids may modify the overall duration of a reaction and may prevent relapse. However, onset of action will be delayed. Never use corticosteroids to the exclusion of adrenaline.

NB: Drug-assisted intubation for impending airway obstruction is a very high-risk procedure and should only be attempted by a senior clinician with advanced airway management skills.
References


Abbreviations

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<tr>
<td>IV</td>
<td>Intravenous</td>
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<tr>
<td>kg</td>
<td>Kilogram(s)</td>
</tr>
<tr>
<td>L</td>
<td>Litre(s)</td>
</tr>
<tr>
<td>LOC</td>
<td>Loss of consciousness</td>
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<tr>
<td>MET</td>
<td>Medical Emergency Team</td>
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<tr>
<td>Min</td>
<td>Minute</td>
</tr>
<tr>
<td>mL</td>
<td>Millilitre(s)</td>
</tr>
<tr>
<td>mmHg</td>
<td>Millimetres of mercury</td>
</tr>
<tr>
<td>O₂</td>
<td>Oxygen</td>
</tr>
<tr>
<td>SBP</td>
<td>Systolic blood pressure</td>
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<tr>
<td>SpO₂</td>
<td>Oxygen saturation measured by pulse oximetry</td>
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