

## Guideline

# Eating and drinking in high risk labour, antacid prophylaxis and pre-operative fasting prior to caesarean Section (CS)

### Audit standard

All women defined as being at high risk of requiring anaesthesia, using the criteria set out below, should receive oral Omeprazole in labour using the regimen described in this document.

## 1 Scope

Local: for use within Maternity Services, and is of relevance to all staff caring for high risk women, either in labour or prior to planned delivery.

This guideline excludes women with a raised BMI labouring on the Rosie Birth Centre as these women will have discussed the increased anaesthetic risks relating to eating in labour and antacid prophylaxis as part of their individualised assessment.

## 2 Purpose

To describe appropriate dietary restrictions for high risk women in labour and prior to elective or emergency CS, and the antacid prophylaxis regime for such women.

## 3 Definitions and abbreviations

AFI	amniotic fluid index
APH	antepartum haemorrhage
BMI	body mass index
CS	caesarean section
CTG	cardiotocograph
DU	delivery unit
IV	intravenous
PCA	patient controlled analgesia
pH	A measure of the acid-base balance of an aqueous solution
H <sub>2</sub> Blockers	H <sub>2</sub> blockers are a group of medicines that reduce the amount of acid produced in the stomach. They are also called 'histamine H <sub>2</sub> -receptor antagonists' but are commonly called H <sub>2</sub> blockers
PPIs	Proton pump inhibitors are a class of medicines that reduce the amount of acid produced in the stomach.

## 4 Introduction

This guideline applies to women in labour, or those in the peripartum period considered to be at high risk of requiring anaesthesia. Low risk women are covered in the Trust's low risk intrapartum guideline LR2.5 [eating and drinking in low risk labour](#).

For the purpose of this guideline, 'high risk' is defined as women who:

1. are at risk of requiring a general anaesthetic during the peripartum period:
  - maternal reasons:
    - oxytocin infusion for induction or augmentation of labour
    - previous lower segment caesarean section (CS)
    - pre-eclampsia on the HR2.18: [severe pre-eclampsia protocol](#)
    - significant antepartum haemorrhage (APH)
    - significant PPH with increased risk of needing anaesthesia
    - epidural analgesia in labour
    - remifentanil PCA
    - awaiting transfer to theatre for manual removal of placenta or perineal tear repair
  - fetal reasons:
    - growth-restricted fetus < 2 kg
    - oligohydramnios (AFI < 5cm)
    - suspicious or pathological cardiotocograph (CTG)
    - significant meconium staining of liquor
2. present an increased anaesthetic risk:
  - raised body mass index (BMI >35)
  - contraindication to regional anaesthesia (e.g. thrombocytopenia, previous back surgery with metalwork)

It should be noted that, whilst studies have addressed whether routine fasting in low risk labour confers any benefit or harm, all the studies included in the latest Cochrane review include only women in active labour who are at **low** risk of potentially requiring a general anaesthetic. There is no evidence for women at increased risk of complications.

## 5 Background

In the mid-1940s Mendelson (1946) gave his classic description of acid pulmonary aspiration syndrome. The realisation that general anaesthesia in obstetric practice was responsible for maternal deaths due to aspiration of solid food particles and gastric acid changed practice from allowing food and fluids in labour to a policy of restricted intake.

Pulmonary aspiration is now a rare cause of maternal mortality. The decrease in the incidence of gastric acid aspiration can be attributed to the widespread use of regional anaesthesia for CS and the introduction of H<sub>2</sub> receptor antagonists (e.g. Ranitidine). H<sub>2</sub> receptor antagonists not only increase pH but also cause a decrease in gastric volume. A woman with a relatively empty stomach, regardless of pH, is unlikely to experience reflux and therefore aspiration is unlikely.

In October 2019 certain formulations of Ranitidine were recalled due to concerns about possible contamination with a carcinogen and as a result other preparations were quarantined by suppliers. The Trust has therefore moved to using PPIs as first line antacid drugs.

The time to reach a gastric pH of 4 following a single dose of omeprazole is 2 hours. The effect is dose-dependent: at 2 hours 20mg inhibited secretion by 51% but 40mg inhibited it by 86%. In the same study after 24 hours suppression was 26 and 48% respectively. Omeprazole should therefore be given as 40 mg doses 12 hours apart to maximise acid reduction.

## 6 Latent labour

Women who are not in active labour may eat a light diet and drink clear fluids (clear squash, isotonic sports drinks\*, water) but this should be reviewed when in active labour. There is no advantage in actively encouraging women to eat.



\*Isotonic sports drinks with (<30 kcal/100 ml) include *Lucozade Sport* and *Powerade*. The non-sport variety of Lucozade is hypertonic and not suitable.

## 7 Active labour

Women in labour can take clear fluids (water, squash, isotonic sports drinks), until a decision is made for operative intervention.



As soon as a definitive decision has been made for transfer to theatre for ANY operative procedure in labour (CS, trial of assisted vaginal delivery) or immediately following delivery (eg manual removal of placenta or perineal tear repair) the woman must be kept starved, i.e. no foods or oral fluids are allowed.

## 8 Protocol for prophylaxis against acid aspiration syndrome

- Omeprazole 40 mg 12 hourly. C
- **The prescription is the responsibility of the obstetric team**, however, in the absence of a medical prescription, midwives can administer one or two doses of Omeprazole under the direction of a patient group direction (PGD).
- Pregnant women, or those less than 48 hours postpartum who are to receive a general anaesthetic, must, in addition to Omeprazole, be given 30ml of 0.3M sodium citrate orally, not more than 20 minutes prior to induction of general anaesthesia. **This is the responsibility of the anaesthetic team.** There is some evidence that a combination of sodium citrate and a PPI reduces the risk of an intragastric pH < 2.5 to a greater degree than using a single agent.

### 8.1 Elective LSCS

Two doses of Omeprazole 40 mg should be given orally prior to surgery regardless of the type of anaesthesia planned.

Women having an elective CS on a morning list should take one dose at 2200hrs the night before and one dose at 0600hrs on the morning of surgery.

Women having an elective CS on an afternoon list should take one dose at 0600hrs and a further dose at 1200hrs on the day of surgery.

### 8.2 Emergency LSCS

Women at risk of needing anaesthesia should be started on Omeprazole 40 mg 12 hourly as soon as possible after arrival on the delivery unit. If they have not had a dose in the preceding 12 hours a dose should be given as soon as transfer to theatre is considered. Intravenous preparations of PPIs are not available on the delivery unit and thus it is important ensure oral Omeprazole is given as soon as transfer to theatre is deemed likely. In the event of a general anaesthetic being required sodium citrate will also be given immediately prior to induction.

Post delivery

Those women at risk from depressed laryngeal reflexes or women with pre-eclampsia should have Omeprazole 12 hourly continued, for 24 hours after delivery, or until discharged from the HR 2.18: [Severe pre-eclampsia protocol](#).

### 8.3 Post CS

Eating and drinking can be commenced after CS in the postnatal ward or recovery area if appropriate, providing the woman is recovering well, does not have complications and feels hungry or thirsty. There is no need to listen for bowel sounds. A

All women who have had a CS or an operative delivery requiring a general anaesthetic should continue to be nil by mouth until fully conscious and wide awake.

### 8.4 Storage of antacid drugs

#### 8.4.1 Oral Omeprazole

Oral omeprazole is stocked in the drug cupboard on DU.

#### 8.4.2 Sodium citrate

Sodium citrate (30ml 0.3M) oral solution is stocked in the anaesthetic room drug cupboard.

## 9 Starvation prior to planned CS

Women should be starved of food prior to planned CS for a minimum of **six hours**. Clear fluids can and should be given up to **two hours** before, therefore an IV infusion is **not** necessary for delayed CS.



Although in practice this may mean that the third case on the morning elective list can drink up to 0900 hours and on the afternoon list up to 1400 hours, midwives should liaise directly with the anaesthetist managing the elective CS list to confirm this. This is important as it may not be possible to confirm the order of the list until the theatre team brief held immediately prior to the start of the list. During the team brief a “think drink” decision should be made for each woman on the list detailing the time until which she is allowed to drink and this information relayed to the midwife looking after the woman.

## 10 Monitoring compliance with and the effectiveness of the guideline

The use and effectiveness of this guideline, in particular the audit standards, will be monitored through the following processes:

- **Risk management** – any incident of maternal acid aspiration syndrome or ‘near miss’ will be reviewed by the obstetric risk manager, who will review the case notes of women according to the [Perinatal Services incident reporting and investigation policy and procedure](#). Following investigation of the incident reports and any complaints, an action plan will be devised and reported to the perinatal clinical governance committee in a quarterly report. This committee will monitor the implementation of the action plan.
- **Clinical audit** – an audit, co-ordinated by the patient safety department, will be undertaken in accordance with the annual audit plan for obstetrics using the audit standard on page 1. Recommendations will be written in the form of an action plan (‘effectiveness trail’); each recommendation will have a nominated lead individual and a specified time frame for

completion. The implementation of this action plan will be overseen by the patient safety department in conjunction with the clinical lead for audit. Any deficits in practice will be escalated according to the [Perinatal Services risk management strategy](#).

## 11 References

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Singata M, Tranmer J, Gyte GML (2013) Restricting oral fluid and food intake during labour. *Cochrane Database of Systematic Reviews*, Issue 8. Art. No.: CD003930. DOI: 10.1002/14651858.CD003930.pub3

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## 12 Associated documents

- HR2.18: [Severe pre-eclampsia protocol](#)
- [Perinatal Services risk management strategy](#)
- [Perinatal Services incident reporting and investigation policy and procedure](#)

## Equality and diversity statement

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## The Rosie Hospital (Maternity)

Women's and children's directorate

### Document management

Document control / change history					
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Version7	T Christmas	Maternity Services	July 2020	PPG	Change to Omeprazole as Ranitidine preparations no longer available following national safety alert.

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