Survey: Method of Antenatal Anaesthetic Review of Women with Morbid Obesity

Authors:
Dr Claire Williams & Dr Megan Jones, Consultant Anaesthetists, Cambridge University Hospitals

Reason for survey:
There is an increasing demand for antenatal anaesthetic services due to increasing numbers of medically complex women, including those with obesity. Obese women are at increased risk of peripartum complications, patient safety and experience are essential. The organisations below make recommendations relating to the anaesthetic assessment of obese women but there is no absolute consensus in current national guidelines about the method of antenatal anaesthetic review.

The RCoA Guidelines for the Provision of Anaesthetic Services (GPAS) for an Obstetric Population 2022 states “there should be a system in place for antenatal anaesthetic review by a senior anaesthetist for women who are morbidly obese. Assessment should be arranged to ensure that timely delivery planning can take place. The duty anaesthetist should be informed as soon as a woman with a BMI above a locally agreed threshold is admitted”. (1)

The RCOG Care of Women with Obesity in Pregnancy (Green-top Guideline No. 72) 2018 states “Pregnant women with a booking BMI 40 kg/m2 or greater should be referred to an obstetric anaesthetist for consideration of antenatal assessment.” (2)

The OAA / AAGBI Guidelines for Obstetric Anaesthetic Services 2013 state “timely antenatal anaesthetic assessment services should be provided for women who have a BMI greater than 40 kg.m-2.” (3)

Several hospitals publish their antenatal clinic referral guidelines online and vary in their guidance with relation to obesity. Units review women with a BMI >40 kg/m2, >45 kg/m2 and > 50kg/m2 and this sometimes varies depending upon the presence of additional co-morbidities. For example, Liverpool Women's (4) review obese women with a BMI greater than 40 kg/m2, Norfolk & Norwich University Hospitals (5) review those with a BMI greater than 45 kg/m2 whilst Northumbria (6) reviews those with a BMI greater than 50 kg/m2.

This survey hopes to provide a description of current practice and clarify the national picture.

A survey was conducted via the OAA and a set of 14 questions sent to all lead clinicians for obstetric anaesthetic services, responses from 47 individuals were received.

The Survey- Questions for Lead Clinicians (all questions mandatory):

1. Do you work in a Maternal Medicine Hub/ Tertiary Centre/ Training Hospital?
   Single choice answer

2. Number of deliveries per year?
   Open ended answer

3. Do you have a designated antenatal anaesthetic clinic? yes/no
   Single choice answer

4. Assuming a clinic is a half-day session, how many antenatal anaesthetic clinics do you provide per month?
   Open ended answer

5. What is the threshold BMI for prompting antenatal anaesthetic review (for the reason of raised BMI)? >35/>40/>45/>50/don't know /we don't have a clinic /other (free text)
   Single choice answer

6. Given your response to Q5 (What is the threshold BMI for prompting antenatal anaesthetic review?)- why have you chosen this BMI threshold value? (please select all that apply) national guidance, local guidance, availability of clinic time, other (free text)
   Multiple choice answer

7. Is this threshold based on: BMI at booking/ BMI at point of referral?
   Single choice answer

8. Do you have a different BMI threshold for review if the parturient has co-morbidities? Yes/no
   Single choice answer

9. If you answered yes to question 8 please list these co-morbidities as per your guideline.
   Open ended answer

10. How do you routinely review parturients with a high BMI in your clinic? Please tick all that apply. Face to face (clinician choice)/ Telephone (clinician choice)/ Patients are given the choice of either face to face or telephone/we do not have a clinic/ other
    Multiple choice answer

11. If these parturients are not reviewed in a clinic setting by an anaesthetist, do you arrange review in any other way? (please select all that apply) face to face review outside of a clinic setting/ review by telephone outside of a clinic setting/ seen by

duty anaesthetist on admission/ other (free text) / patient information leaflet given without anaesthetic review
Multiple choice answer

12. Do you have guidance for informing the duty anaesthetist when an obese parturient is admitted for delivery? Yes/no
    Single choice answer

13. If you have guidance to inform the duty anaesthetist of admission what is your unit's threshold? >35/>40/>45/>50/we don’t have guidance /don’t know/other (free text)
    Single choice answer

14. Do you have any other comments relating to the antenatal anaesthetic review of obese parturients?
    Open ended answer

Results

Responses were received from 47 individuals
Responses were provided by the OAA in an excel format
Data was manually reviewed and tidied for duplicates and irrelevant responses by CW
Some questions have more than 47 responses as they were multiple choice

1. Do you work in a Maternal Medicine Hub/ Tertiary Centre/ Training Hospital?
   Single choice answer

   47 responses
   36 (77%) training hospitals (DGH)
   6 (13%) maternal medicine hubs
   4 (9%) tertiary centres
   1 (2%) private maternity unit

2. Number of deliveries per year?
   Open ended answer

   47 responses
   Range 950-6500 deliveries per year
   Average 3386
   Mode 3000
   Median 3000

3. Do you have a designated antenatal anaesthetic clinic? yes/no
   Single choice answer

   47 responses
   42 (89%) yes
   5 (11%) no

4. Assuming a clinic is a half-day session, how many antenatal anaesthetic clinics do you provide per month?
   Open ended answer

   47 responses, Where range given, higher number analysed
   Range 0-50 clinics per month
   Average 6.4
   Mode 4
   Median 4

5. What is the threshold BMI for prompting antenatal anaesthetic review (for the reason of raised BMI)? >35/>40/>45/>50/don't know /we don't have a clinic /other (free text)
   Single choice answer

50 responses
1 (2%) BMI>35 kg/m2
27 (54%) BMI>40 kg/m2
14 (28%) BMI>45 kg/m2
7 (14%) BMI>50 kg/m2
1 (2%) Other

Other

- We do have a midwifery anaesthetic screening process in place for BMI 35-45, looking for difficult backs & airways or any patient who also has had a previous difficult regional who we will offer to see in clinic antenatally

6. Given your response to Q5 (What is the threshold BMI for prompting antenatal anaesthetic review?)- why have you chosen this BMI threshold value? (please select all that apply) national guidance, local guidance, availability of clinic time, other (free text)
   Multiple choice answer

   68 responses
   23 (34%) Availability of clinic time
   18 (26%) Local guidance
   21 (31%) National guidance
   6 (9%) Other

   Other

- An audit presentation at St George's a few years ago indicated complication rate in obese only increased above a BMI of 50.
- Badgernet tick box
- However changing due to clinic time available and patients not often wanting an appointment. 50 is the new 40!
- Increasing “normality” of BMI 40 unfortunately.
- pragmatic view - under 45 too many to see and no clinical benefit, especially if previous delivery.
- This is the bmi threshold that we feel is relevant for review, providing the woman is otherwise completely well.

7. Is this threshold based on: BMI at booking/ BMI at point of referral?
   Single choice answer

   47 responses
   8 (17%) BMI at referral
   39 (83%) BMI at booking

8. Do you have a different BMI threshold for review if the parturient has co-morbidities? No the threshold is the same/Yes BMI >35/Yes BMI >40/yes BMI >45/Yes BMI>50/other
   Single choice answer

   47 responses
   27 (57%) No the threshold is the same
   5 (11%) Yes BMI>35 kg/m2
   14 (30%) Yes BMI>40 kg/m2
   1 (2%) Yes BMI>45 kg/m2

9. If you answered yes to question 8 please list these co-morbidities as per your guideline.
   Open ended answer

   47 responses
   31 (66%) n/a
   16 (34%) positive response

OSA or any additional cardiac / neuro / respiratory comorbidity
Any comorbidities, complications of pregnancy or previous difficulties with anaesthesia.
and any other significant comorbidity or previous traumatic delivery/failed anaesthesia
any cardiovascular, respiratory and neurological illness. spine surgery, anaesthetic problem, Jehovah’s w, extreme needle phobia
Any of the other referral criteria to the clinic
Anything else
Cardiac, pulmonary, VTE, DM, airway issues, and neurologic comorbidities.
cardiac, respiratory, neuro, haematology
Cardiac/respiratory disease. Neurological disease. Haematological problems. Concerns re iv access
Cardio-respiratory, diabetes
Coagulopathies, back problems/pathology, previous difficult CNB, previous open abdominal surgery

CVS or resp disease or other that would impact on delivery of anaesthesia (eg thrombocytopenia)
Diabetes, hypertension, cardiac, neurological, renal, hepatic
It is flexible and referrals are triaged
Not listed - any other comorbidity
We have not specified the co morbidities in relation to BMI, only if the patient had Co morbidities as per our general clinic guideline

10. How do you routinely review parturients with a high BMI in your clinic? Please tick all that apply. Face to face (clinician choice)/ Telephone (clinician choice)/ Patients are given the choice of either face to face or telephone/we do not have a clinic/ other
Multiple choice answer

    60 responses
    39 (65%) Face to face (clinician choice)
    12 (20%) Telephone (clinician choice)
    4 (7%) Patient choice
    1 (2%) We do not have a clinic
    4 (7%) Other

    Other

- Can accommodate telephone but unable to assess airway
- If they live very far away then sometimes offer phone appointment instead, particularly if multiparous with history of vaginal deliveries
- Offer a virtual appointment as a choice along with posted information (OAA)
- We can offer video consult but better F2F to assess airway and back

11. If these parturients are not reviewed in a clinic setting by an anaesthetist, do you arrange review in any other way? (please select all that apply) face to face review outside of a clinic setting/ review by telephone outside of a clinic setting/ seen by duty anaesthetist on admission/ other (free text) / patient information leaflet given without anaesthetic review
Multiple choice answer

    67 responses
    8 (12%) face to face review outside of a clinic setting
    3 (4%) review by telephone outside of a clinic setting

30 (45%) seen by duty anaesthetist on admission
10 (15%) patient information leaflet given without anaesthetic review
16 (24%) other

Other

- All clinic referrals are triaged to either leaflet, phone call or F2F. Depends on individual circumstances/weight/co-morbidities/previous anaesthetic etc etc
- Antenatal face to face review in the Maternity Outpatient Assessment Unit by duty Obs. anaesthetist for parturient with BMI 40 - 49.9 and are otherwise healthy. Face to face antenatal anaesthetic clinic appointment by Consultant Obstetric Anaesthetist if BMI>50.
- Ad hoc, dependent on info getting to a duty anaesthetist
- If missed referral, DNA or intrauterine transfer
- If referred too late for clinic or appointment not available, ideally telephone review but leaflets if not possible.
- If they don't come to appointment tend to send BMI leaflet to badgernotes and may flag for review on arrival in labour/induction if felt particularly high risk
- Leaflet given to women with below threshold BMI
- Na
- Not seen
- Patient information leaflet given as per BMI of ACSA.
- Second review on admission for airway assessment
- Seen on the day
- They are reviewed in clinic as per previous question
- Very inefficient system to NOT see these ladies in a designated clinic (ours is an 'ad hoc' type clinic, roughly 2 per month- against a need for about 4/month)
- We encourage all high BMI px to be assessed by duty anaesthetist/ notes & plan reviewed

12. Do you have guidance for informing the duty anaesthetist when an obese parturient is admitted for delivery? Yes/no/other
Single choice answer

47 responses

16 (34%) No
31 (66%) Yes

13. If you have guidance to inform the duty anaesthetist of admission what is your unit's threshold? >35/>40/>45/>50/we don't have guidance /don't know/other (free text)
Single choice answer

47 responses
1 (2%) BMI>35 kg/m2
26 (55%) BMI>40 kg/m2
1 (2%) BMI>45 kg/m2
2 (4%) BMI>50 kg/m2
12 (26%) No guidance
1 (2%) Don't know
4 (6%) Other

Other

- Anyone with an anaes mx plan as above
- Based on individual assessment in clinic
- However becoming increasingly irrelevant
- No official guidance but it is flagged if BMI >40

14. Do you have any other comments relating to the antenatal anaesthetic review of obese parturients?
Open ended answer

BMI > 40 becoming an everyday occurrence and proving impossible to see them all in clinic
Increasing numbers significantly impacting on our clinics. Need an alternative option
Increasing problem. In our unit 50% of patients are BMI > 30 . We are considering a graded approach due to high numbers BMI > 40 vs number of clinic slots
Our clinic is overflowing and we are thinking of changing guidelines to only see BMI >45 and send leaflet and an offer of appointment to Bmi 40-45s. But it is not supported by national guidelines.
We couldn't cope with seeing all >35, as we currently struggle to fit everyone into our 9-10 clinic slots per session

Workload expansion has led to raising BMi cutoff for review; some slip through & get review by duty anaes as described.
OAA leaflet is what we use but is hard to find these days on the new labourpains.org website. Also could do with revising..
Essential for us to see these patients in clinic to give time for antenatal education and planning safe care
If a lady was seen in a previous pregnancy and hasn't changed much in weight we do not routinely see her again.
If seen in previous pregnancy we do not see them again /assuming previous plan remains in place
We have often seen the patient in previous pregnancy with previous issue and were just repeating the same again... maybe if there have been no changes from previous pregnancy & patient happy retained information. They an decide if want further appointment
If bmi over 50, an mdt conversation is done. Preparations also done for their delivery.
It is better to formalise a specific guideline for preoperative assessment in labour ward and emergencies
It's becoming more prevalent as a reflection on the general increase in obesity in the populace. This is not a good thing
Limited capacity in informal clinic (unfunded, no dedicated staff) therefore not all women seen
Need weigh patients at each ANC visit and refer any ladies with high BMI and not just based on the booking BMI
Referral made on either booking BMI or if BMI exceeds threshold during pregnancy
Not sure we add much value in the clinic. We have a lot of obese patients.
Staff are so used to dealing with BMI 40+ patients, the benefit of planning care for patients around this threshold isn’t so great anymore.
Very badly done as it is driven by available resources rather than clinical need. No support from Management to link this activity to patient safety/quality
We don't have a clinic room so just have to find a spare room on labour suite, or any administrative support (business case refused) currently so it is a nightmare
We have a significant proportion of our ladies with BMI >40. We are also seeing a steady rise in women with non-Obstetric comorbidites.
We have very few as we operate quite strict cut offs as we are a low-risk unit
We phone the patient s the day before to remind them. Our non-attendance rate is around 10-20%, even with this.
We refer patients with current BMI of 50 and above to a tertiary center.

Discussion

47 obstetric units responded to our survey. Most (89%) of these units have an antenatal anaesthetic clinic. Despite national guidance, this survey showed that 42% of obstetric units use a BMI > 45 kg/m2 as their threshold BMI for prompting antenatal anaesthetic review (28% use BMI > 45 kg/m2, 14% use BMI >50 kg/m2). National rates for morbid obesity have increased over time and a third of units that responded (34%) sited 'availability of clinic time' as a reason for choosing their threshold. National Guidance is not fully in alignment. In this survey, concern was expressed about funding, resources, space and the decision to change from national advice.

83% of units use BMI at booking for their threshold for referral, so expecting weight gain in pregnancy, it is likely that some women who move into the threshold levels for morbid obesity at the point of birth, are already excluded from antenatal anaesthetic review.

43% of units use a different threshold for BMI review, if other co-morbidities are present. In this survey, history of previous birth was also mentioned as a factor influencing decisions around antenatal anaesthetic review. There were comments that suggested lower morbid obesity BMIs had less complications or questioned the clinical benefit of review at these levels.

In this survey, method of review included 65% face to face appointments and 20% telephone appointments (by anaesthetic choice) and 7% allowed the woman to choose. Other methods of review and provision of information noted in this survey include virtual/ video consultation, Patient Information Leaflets (including via post), review by the duty anaesthetist in the antenatal period or on admission for delivery, ad hoc telephone or face to face review, midwife anaesthetic screening (for backs, airways or previous difficult regional anaesthesia). However, compared to face-to-face review, not all key points of assessment (venous access, airway, lumbar spine assessment) are possible during alternative methods of review, or provision of information only. National guidance suggests 'timely' antenatal anaesthetic review, and it would seem more appropriate to provide information and risk assessment prior to the day of delivery for several reasons. One unit noted that they undertook an 'MDT conversation' for women with a BMI >50 kg/m2.

31 (66%) units have guidance for informing the duty anaesthetist when an obese woman attends for birth, as per RCoA ACSA guidance - 'The duty anaesthetist should be informed as soon as a woman with a BMI above a locally agreed threshold is admitted' (7). 26 of these 31 units use the threshold of BMI> 40 kg/m2.

Our unit experience is that BMI > 40 kg/m2 is the most common reason for referral to the antenatal anaesthetic clinic and this group of women also has the greatest number of did not attends (DNAs) (8), making use of clinic time and relevance to women even more important.

The BMI measurement alone, which does not differentiate between central or peripheral adiposity (which may also influence other co-morbidities), does not predict individual risk. The assumption that all women with a BMI>40 kg/m2 accurately identifies serious anaesthetic risk is not correct (9).

Obstetric units are finding local strategies to improve efficiency in use of resources and clinic time, to provide safe care and patient information, accommodating patient choice and convenience. However, there is a need for further information about more specific evidence-based risks to inform national obstetric guidance and it would be helpful if the major stakeholders in obstetric care could provide consensus guidance.

Service Change

Like other units have described in this survey the increasing number of women with morbid obesity is becoming a burden and without greatly increasing our clinic availability it is difficult to meet the needs of assessing these women face to face in an anaesthetic clinic. We currently review all women with a booking BMI >40 kg/m2.

We would like to consider a trial to:

1. Providing a patient information leaflet to all women with a booking BMI >40 kg/m2 (internet link or paper information)
2. Assessing all primiparous women with a booking BMI >40 kg/m2 face to face in an anaesthetic clinic.
3. Offering an appointment to all multiparous women with a booking BMI 40-45 kg/m2
4. Assessing all women with a booking BMI >45 kg/m2 face to face in an anaesthetic clinic
5. Inform the duty anaesthetist when a woman with a BMI > 40 kg/m2 is admitted in labour.

If a woman has a medical condition in addition to obesity that is included in our guideline for referral to the antenatal anaesthetic assessment clinic they will of course be reviewed on those grounds.

Our patient facing website allows all pregnant women to request an anaesthetic review in pregnancy and this will not change. Anecdotally we find women who have had suboptimal labour analgesia or difficulty with anaesthesia for operative birth wish to discuss these issues. We have recently introduced, as per GPAS guidelines, an anaesthetic follow-up clinic so these self-referrals to the general antenatal anesthetic assessment clinic may reduce.

References

1. https://rcoa.ac.uk/gpas/chapter-9#section-3.11
2. https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1111/1471-0528.15386
3. https://www.oaa-anaes.ac.uk/assets/_managed/editor/File/Guidelines/obstetric_anaesthetic_services_2013.pdf
4. https://www.liverpoolwomens.nhs.uk/media/2757/mat_2018-185-v2-information-for-pregnant-women-with-a-raised-bmi.pdf
5. https://www.nnuh.nhs.uk/publication/referral-to-obstetric-anaesthesia-high-risk-clinic-v5/
6. https://nhslguidelines.scot.nhs.uk/media/2055/anaesthetic-assessment-of-women-with-high-body-mass-index-in-pregnancy-november-2020-281021.pdf
7. RCoA Anaesthesia Clinical Services Accreditation (ACSA). Accreditation Standards 2022.
8. Service evaluation: failed attendance at the antenatal anaesthetic assessment clinic. IJOA. P42. Abstracts of free papers presented at the annual meeting of the Obstetric Anaesthetists' Association. Volume 26, Supplement 1, S6-S54, May 2016. DA Wotherspoon, JA Pickett, ME Jones.
9. Morbidly obese patients should not be anaesthetised by trainees without supervision. IJOA. Martin Dresner (Opposer:) Volume 18, Issue 4, Oct 2009, p 376-378