

Caesarean Section Delivery in Women with Morbid Obesity

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18/01/23, University Hospital Wishaw

Introduction

- Obesity is becoming increasingly prevalent in the UK, with 21.3% of the antenatal population being obese [1]
- High pre-pregnancy BMI is associated with a small but statistically significant increase in severe **maternal morbidity or mortality** [3]
- The 2015 MBRRACE-UK review into maternal deaths reported that 30% of women who died were obese

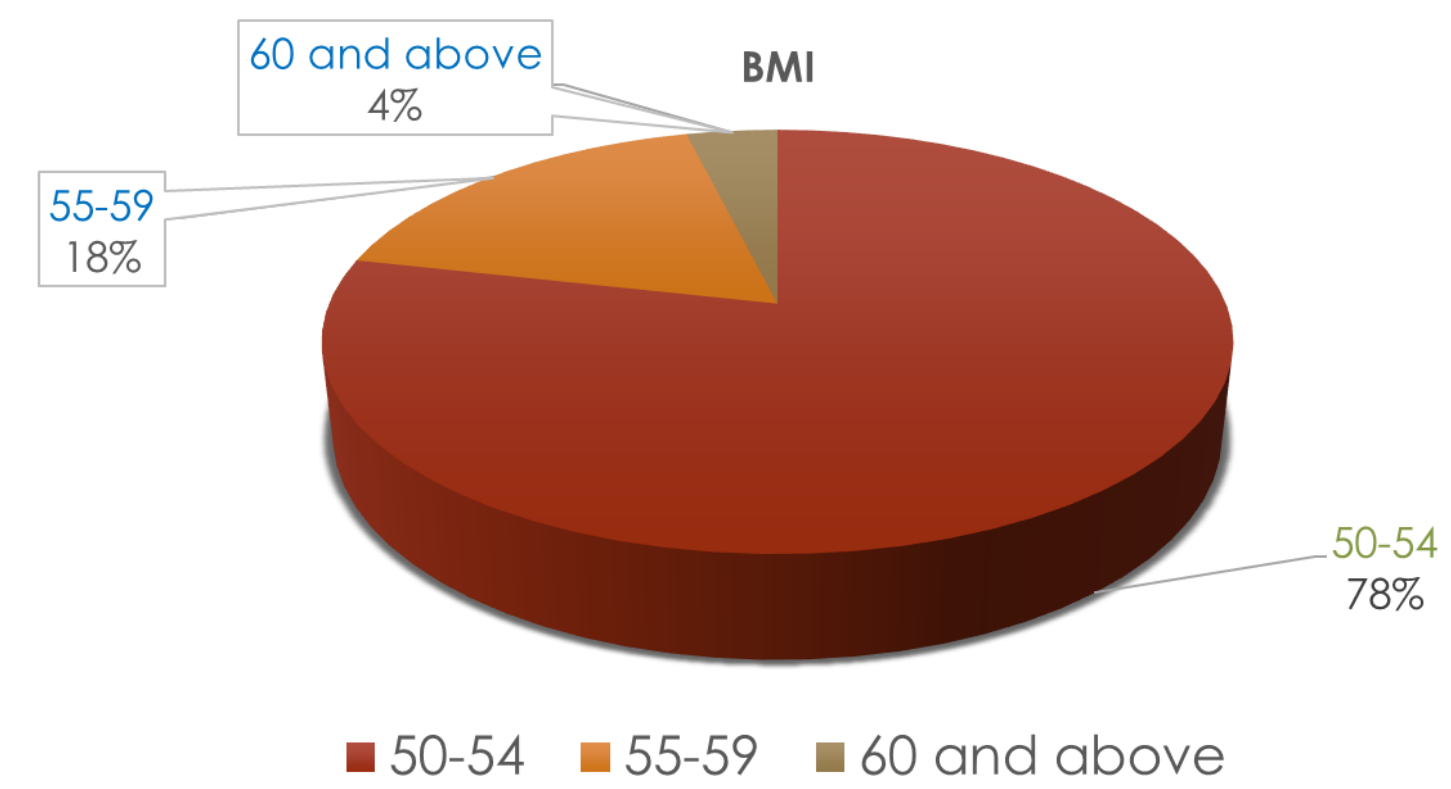
Aims

- to **determine the outcome** after caesarean section in morbidly obese women
- to assess our local practice
- identify areas of improvement to **reduce the risk of surgical site infection (SSI)** and to minimise re-admission after a caesarean section

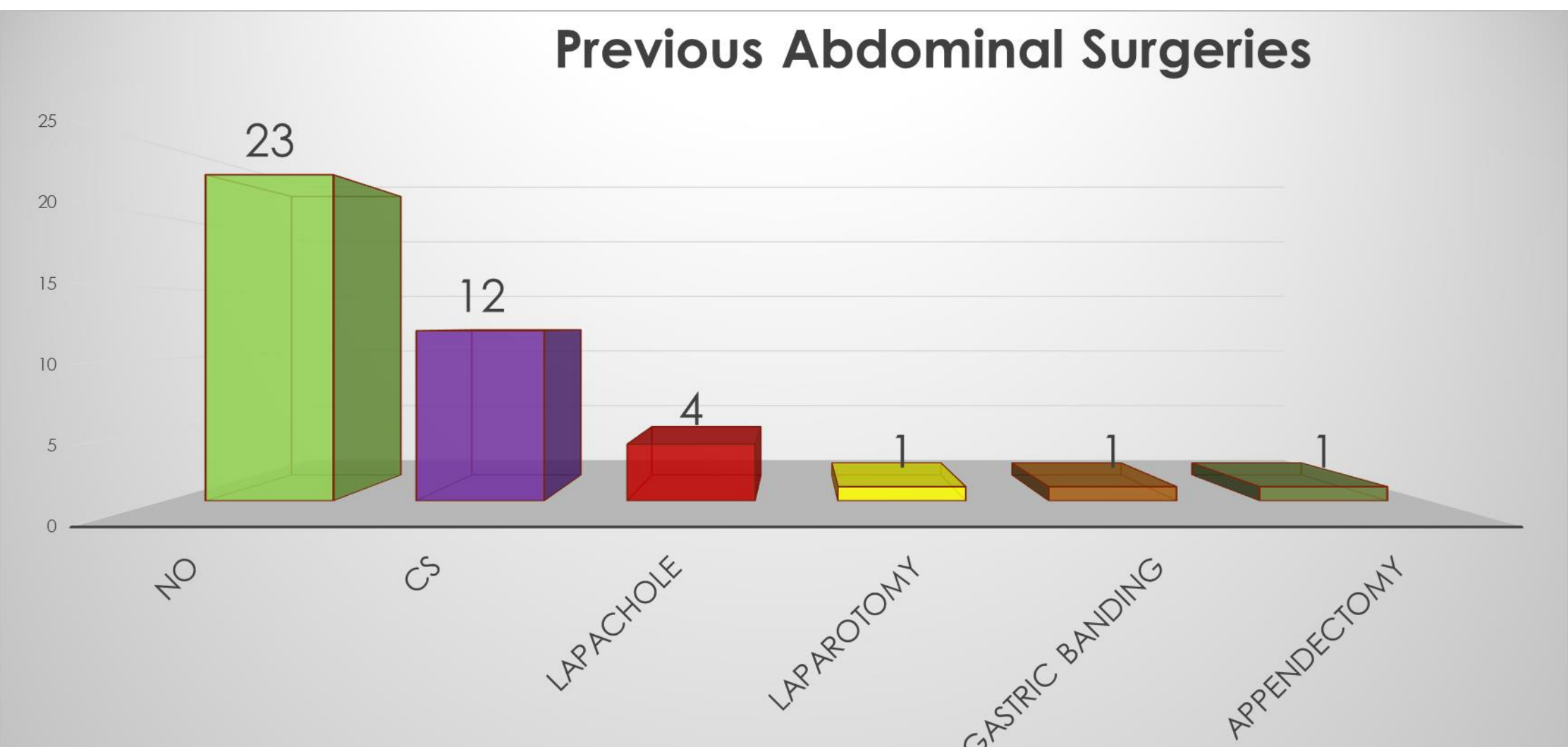
Design and Methods

- A **retrospect** review of all morbidly obese patients who **delivered by caesarean section** between Sep 2020 to Nov 2022 at University Hospital Wishaw
- 42 women** identified using Badgernet application who had **BMI >50 at delivery** and were delivered by Caesarean Section over last 27 months.
- Notes were reviewed and audit proforma was filled out for each patient.
- Included emergency and elective CS

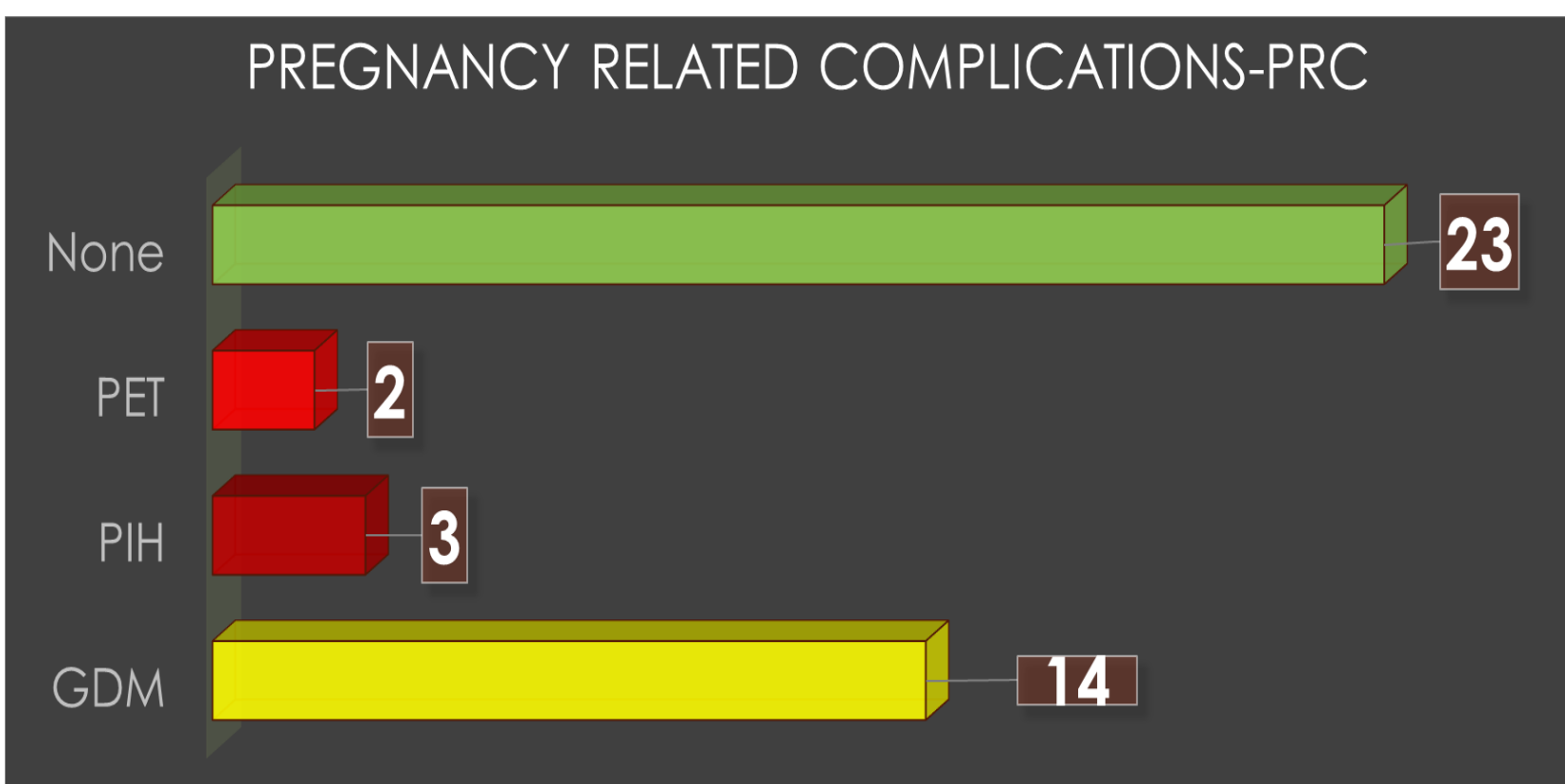
Results and Findings



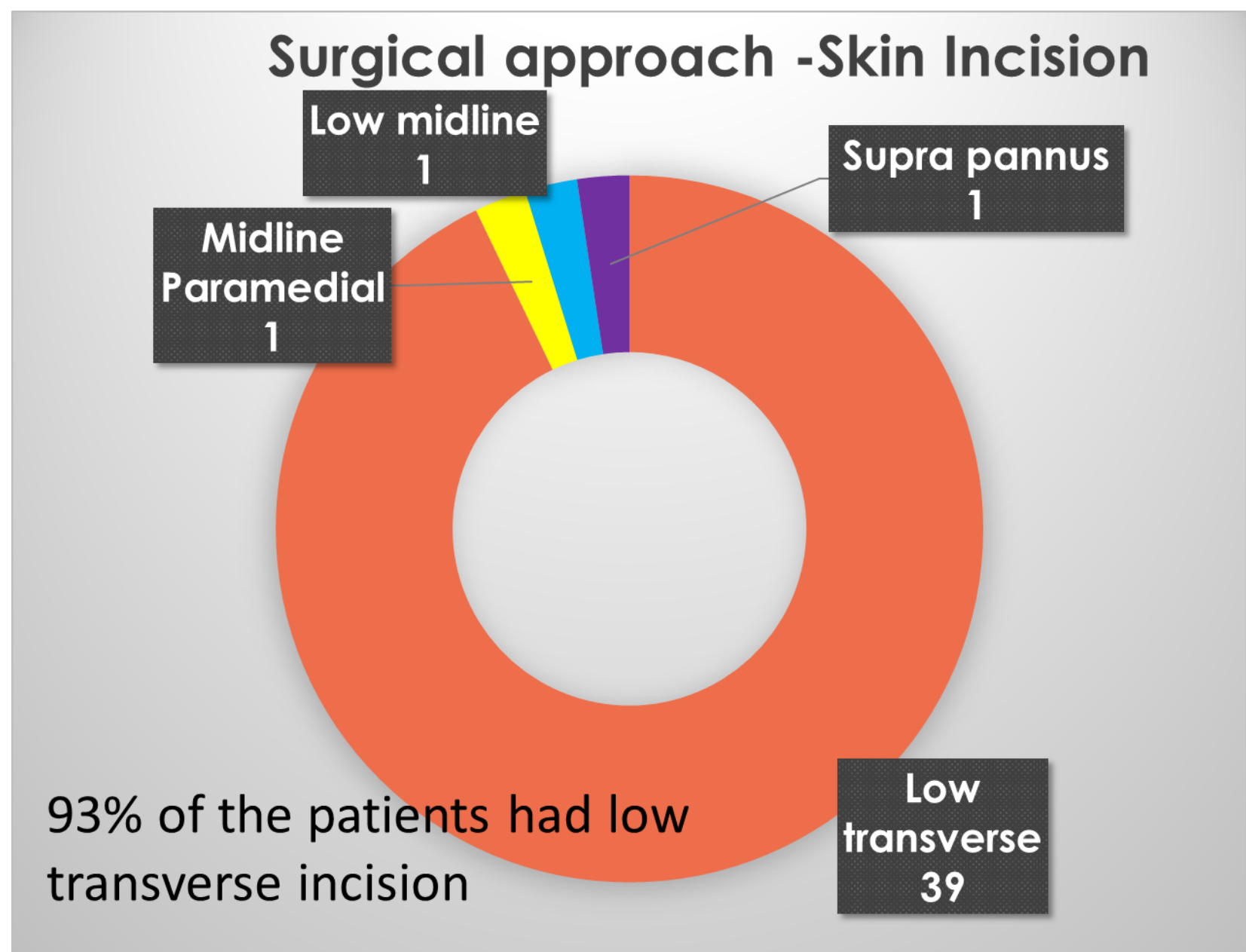
Most of the patients identified had a BMI between 50 and 54. 40 women had singleton pregnancies and 2 had twin pregnancies.



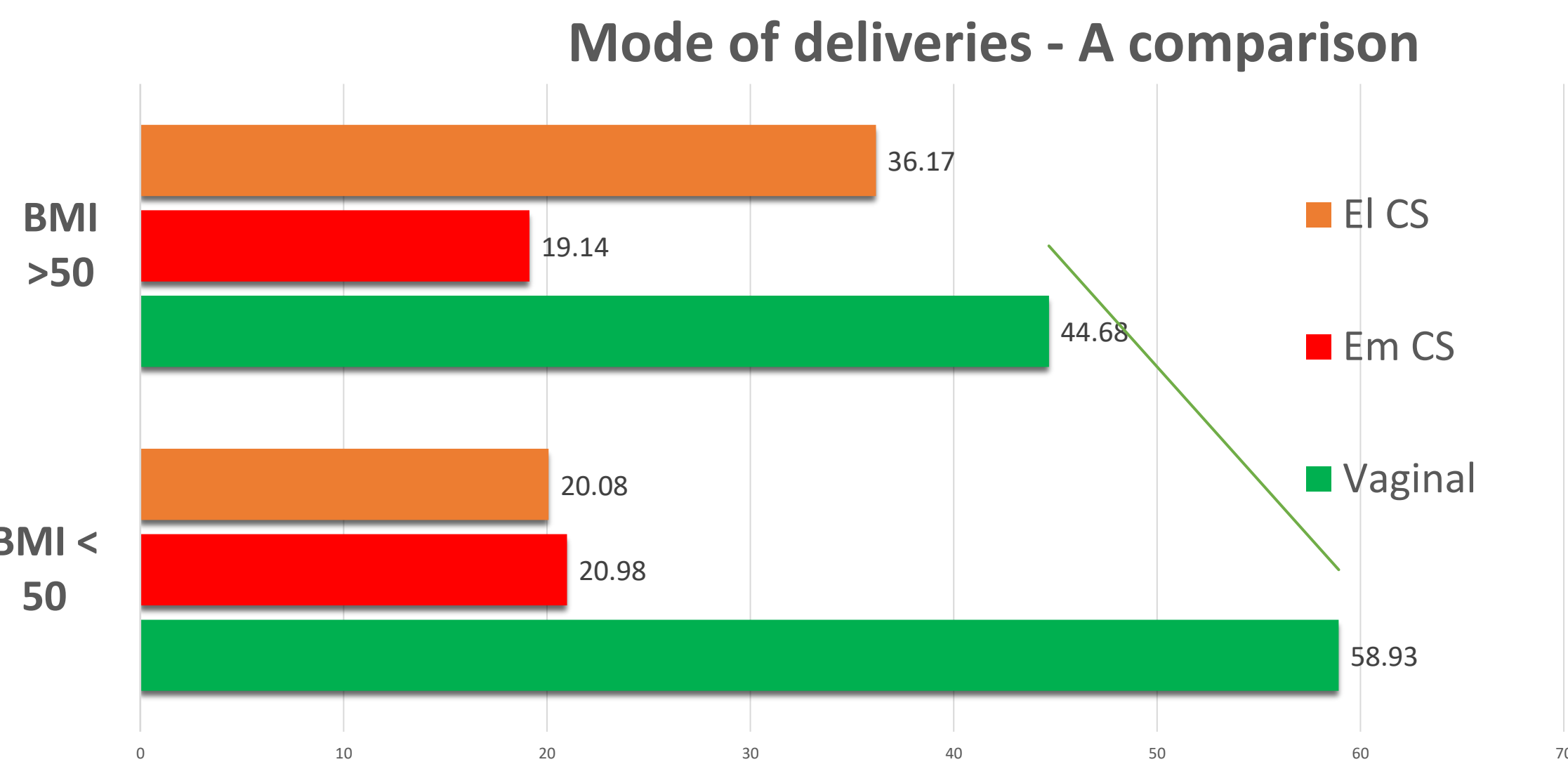
45% of patients had previous abdominal surgeries mainly previous CS (63%)



45% of the patients had PRC in which, Gestational Diabetes Mellitus (GDM) (74%) was the most common



93% of the patients had low transverse incision



- For the rectus sheath, PDS was used in 32 (76%) of the cases, followed by Vicryl (7 cases) and Polysorb (3 cases).
- The skin was closed mainly by using Biosyn in 16 cases (38%) followed by Staples in 15 (36%), followed by Polysorb in 10 (24%), with prolene used in just one case (2%)
- All of the patients received pre-operative antibiotic prophylaxis. 60% of patients received additional post operative antibiotic cover.
- ST6/7 (34.61%) and consultants (30.95%) were the main the operating surgeons, followed equally by staff grade and ST3/4/5(16.66%).Consultant was present in theatre in 81%
- Indication for Emergency CS -Delay in 1st stage was the main indication (27%) followed by failed induction (22%)
- Indication for Elective CS- Previous CS (40%) was the primary indication for elective CS followed by maternal request (20%)
- Of those who had ruptured their membranes, all were delivered within 24hrs. Only 1 patient had pyrexia in labour.
- 38% of cases presented with postnatal infection. 4 patients required CT imaging postnatally but only 1 patient returned to theatre for wound exploration/debridement.
- Only 47% of women with BMI > 50 achieved vaginal delivery** compared with 59% in those with BMI <50. **Rates of CS were higher** in BMI >50 (55%) vs BMI <50 (41%)

- Incidence of SSI was higher in patients who had **previous abdominal surgery** (63%), **co-morbidities/PRC** (56%) and **GDM/pre-existing diabetes** (70%)
- 50% of those who were readmitted with SSI had skin closure with the **multifilament suture**, polysorb (compared with 25% for both staples and Bisosyn)
- Incidence of SSI was 46% with consultant, 71% with staff grade, 13% with ST6/7 and 42% with ST3, 4, 5
- With cons presence SSI rate was 34%, without cons presence SSI rate was 57%
- 5 % with SROM and 7% of patients who went into labour developed wound infection
- Almost 50% of those given post op antibiotics **still developed SSI**
- The two patients who had subsequent pregnancies both had a **reduction in BMI** from the last pregnancy

Discussion

- Though consultants were present in theatre for most cases, **no correlation** was found between seniority of surgeon and readmission rates
- Evidence for suprapannus or midline incisions versus transverse lower abdominal incisions is conflicting [2, 7]
- Though we have started performing midline and suprapannus incisions in obese women at CS, the numbers of these cases are still too low for us to draw conclusions
- Advisable that the surgeon performing the procedure make an **individualised assessment** for which approach to skin incision is most appropriate.
- There is some evidence that standard prophylactic antibiotics doses are not as effective in obese patients compared to non-obese population [11]
- Our data **did not** show that post op antibiotic prophylaxis significantly reduced SSI but it may be worth looking into the dose of antibiotic that patients received at knife to skin
- Counselling is best initiated prior to conception. However, our findings indicate that further **counselling in antenatal care** is also necessary
- BMI reduction in both of the women who conceived again suggests that **healthy lifestyle advice** given in pregnancy care may be effective

Recommendations

- Pre-empt** possibility of CS in those with BMI > 50:
- Have **a pre-operative plan** involving abdominal inspection and examination, including skin incision, use of retractors, antibiotic prophylaxis and negative suction dressings.
- Women should be clearly counselled regarding the **risks of pregnancy in the obese patient**, including maternal risks as well as fetal risks

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