

RE-LAPAROTOMY AFTER CAESAREAN SECTION – A SINGLE CENTER EXPERIENCE

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Background

- Caesarean section (C.S) is the most common surgical procedure performed in obstetrics.
- Re-laparotomy following caesarean section is uncommon but is associated with significant maternal morbidity and mortality.¹

Objective

To study the clinical profile and outcome of women undergoing re-laparotomy after caesarean section (RLACS)

Methodology

Setting – JIPMER hospital, Pondicherry (Tertiary referral hospital, Southeastern coastal India) (Figure 1)
Duration - 1 January 2015 to 31 December 2024 (10 years)
Design - Retrospective observational study

Inclusion criteria

All cases who underwent laparotomy in puerperal period (within 42 days) after Caesarean section or Caesarean hysterectomy

Total births in 10 years -1,39,470
Total Caesarean Sections – 34,217
Caesarean Section rate : 18-25%

In hospital Re-laparotomy cases – 47 (0.13%) ; 1.3/1000 C.S

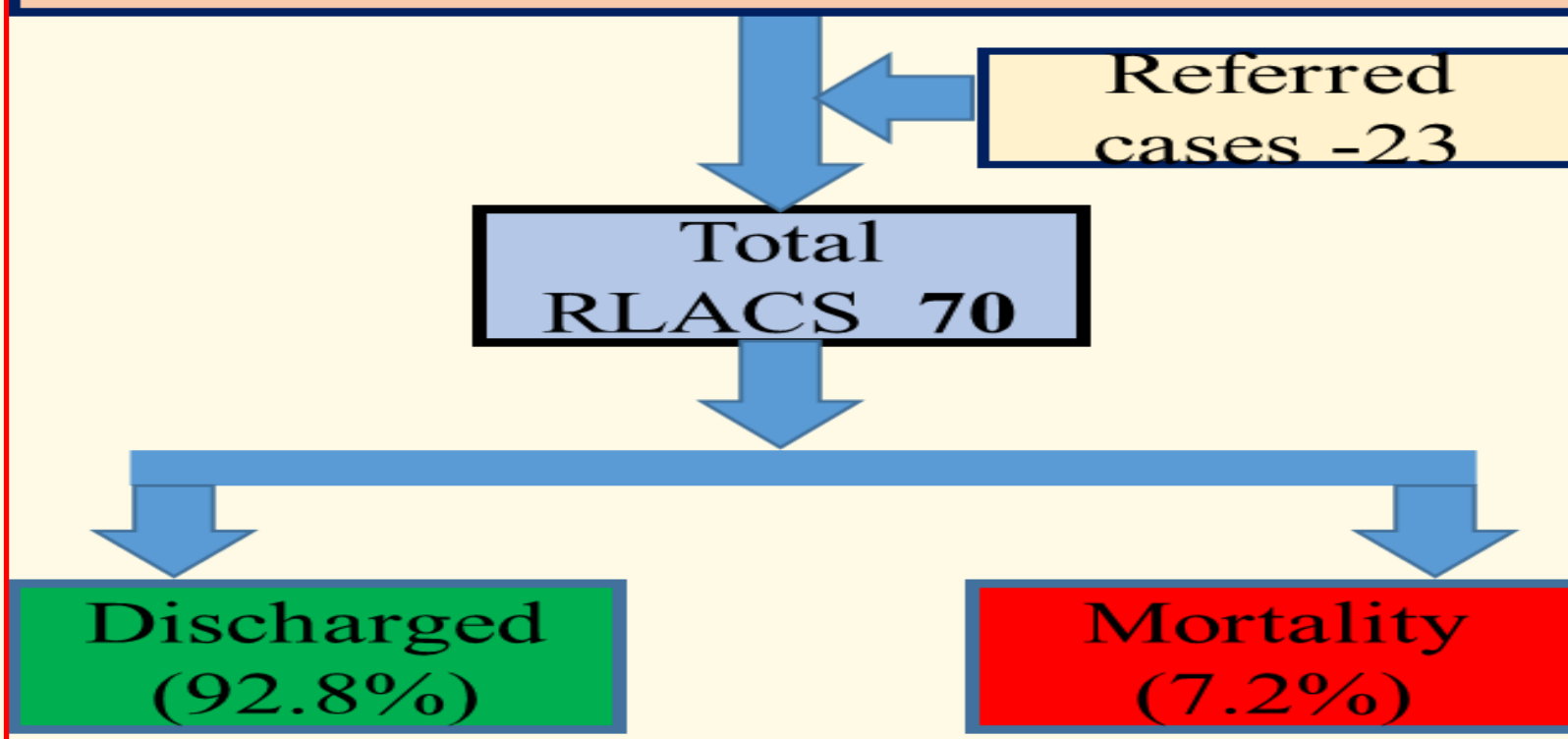


FIGURE1: Flow diagram of cases and outcome

SL NO	Interventions performed	Number
1	Arrest of bleeding	
A	Abdominal wall	14
B	Intra abdominal	3
C	CS scar	2
2	No bleeder identified	4
3	Compression sutures	2
4	Pelvic vessel ligation	7
5	Hysterectomy	5
6	Adhesiolysis and peritoneal lavage	6
7	Drainage of abscess/pyoperitoneum and lavage	3
8	Uterine rent repair + peritoneal lavage	4
9	Repair of bowel/bladder/ureter damage	5
10	Removal of foreign body and peritoneal lavage	1
11	Peritoneal lavage +/- wound debridement + rectus sheath closure	17
12	Miscellaneous	4

TABLE 1: Interventions performed during re-laparotomy.

Results

- Commonest indications for re-laparotomy were hemorrhage (44.2%), burst abdomen (21.4%) and infection (21.4%) (Figure 2,3)
- Mean age - 28 years; 2/3rd - multiparous
- Common maternal factors among those who underwent re-laparotomy include anemia (64%), previous caesarean section (44.2%), hypertensive disorders of pregnancy (22.8%), hyperglycemia in pregnancy (21.4%), hypothyroid (14.2%), heart disease (8.5%), anti-coagulant use (8.5%), placenta previa (7.1%) multiple pregnancies (5.7%) and abruption (4.2%)
- Mean gestation age at delivery - 37 weeks, majority had emergency caesarean delivery
- Time interval between C.S and re-laparotomy - within a week in 70%
- Maternal morbidities - Massive blood transfusion (7.1%), acute kidney injury (10%), colostomy/ ileostomy (4.2%), acute Sheehan syndrome (3%), cardiac arrest leading to Hypoxic Ischemic Encephalopathy (1.4%). Prolonged hospitalization of more 21 days in 47%
- Case fatality rate - 7.1%. Severe sepsis - cause for mortality in 80% (Figure 4)

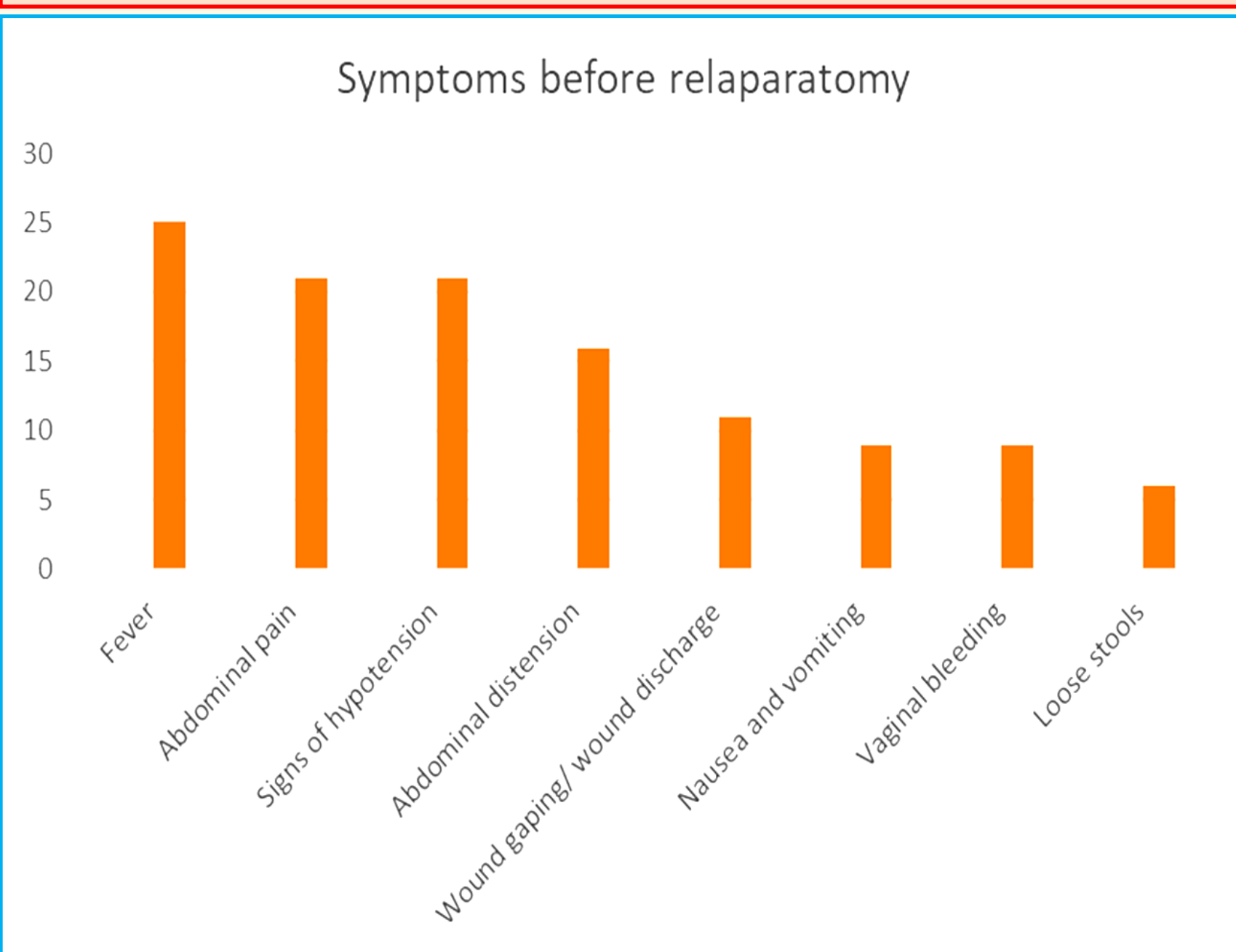


FIGURE 2: Signs and symptoms before re-laparotomy

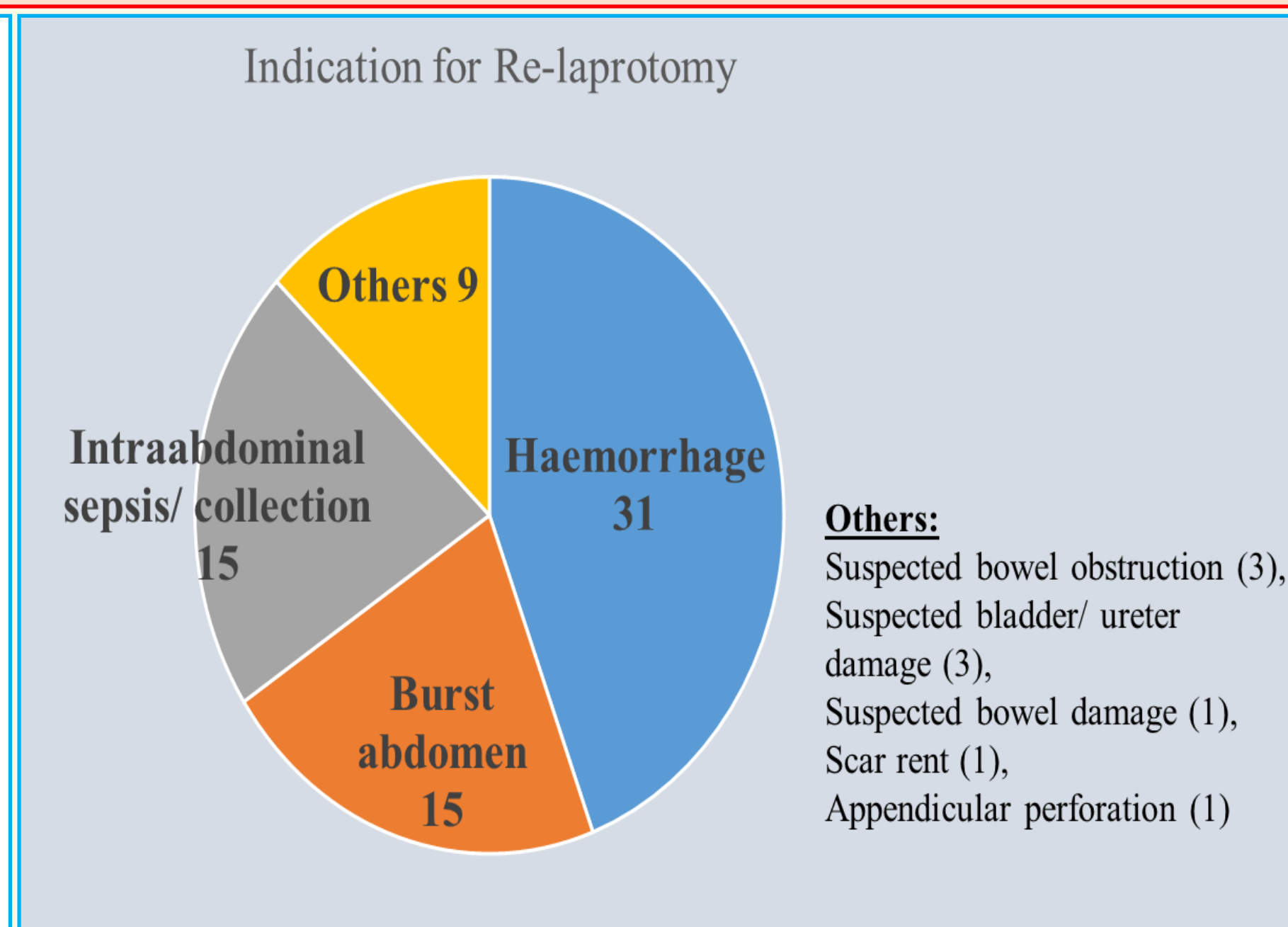


FIGURE 3: Indications for re-laparotomy (Values are numbers)

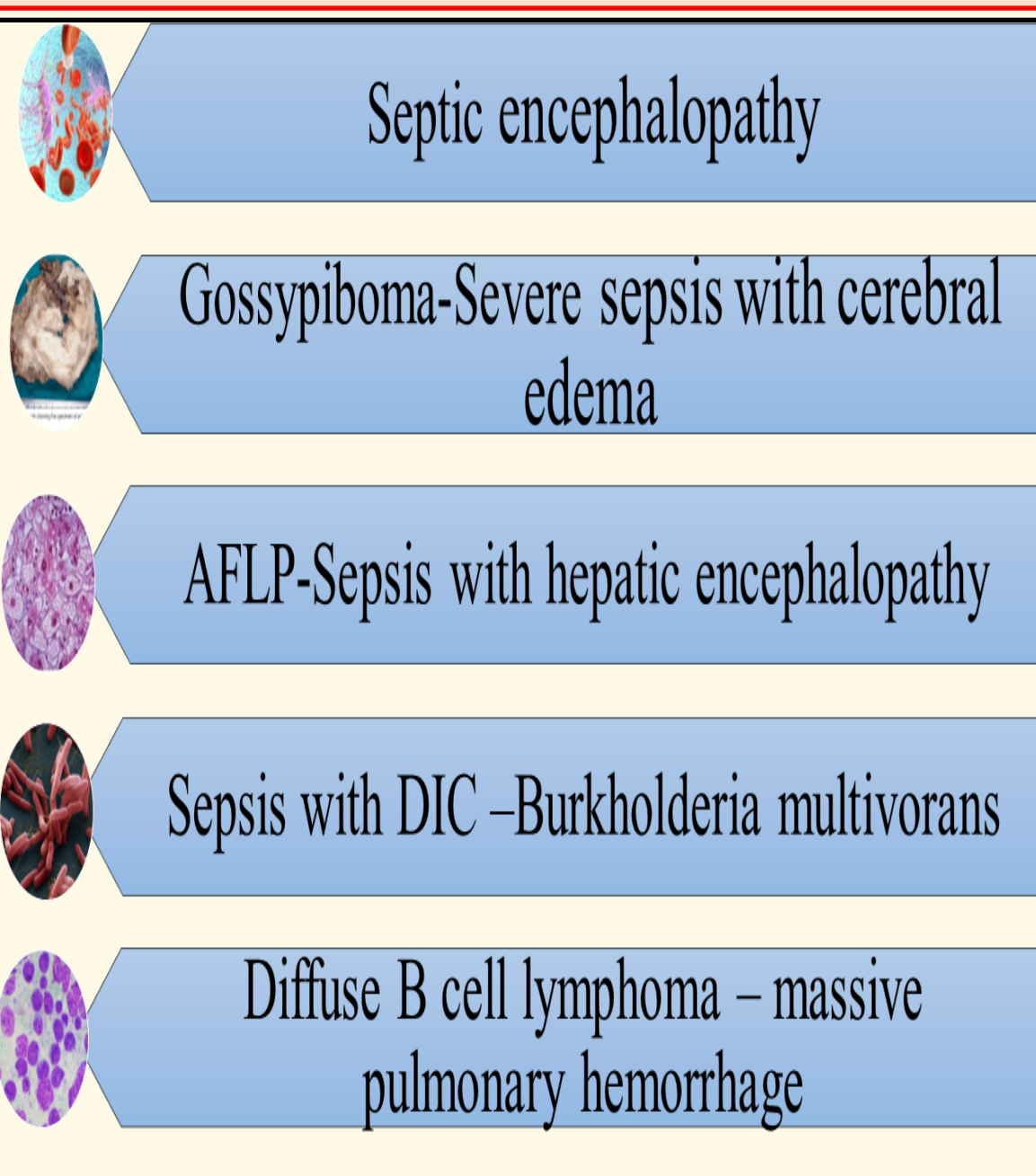


FIGURE 4: Causes of mortality. Total number = 5

Discussion

	OUR STUDY	Shan et al (systematic re-view and meta-analysis) ²	Bhatia et al (National case-control study using UKOSS) ³	Witteveen et al ⁴
Prevalence of RLACS	1.3 per 1000 C.S	0.36% (95%CI 0.26-0.46%)	1 in 1282(95%CI 1:1099–1:1471)	30.1 per 10,000 C.S
M.C Indication for RLACS	Hemorrhage (44.2%)	Hemorrhage	Hemorrhage (66%)	Hemorrhage (58.1%)
Risk factors	Anemia, Previous caesarean section, Preeclampsia	Higher maternal age, increasing parity, second stage C.S, pre-eclampsia, preterm labour and multiple pregnancy	Receipt of blood transfusion, use of a G.A, pre-eclampsia, black ethnicity, PPH, use of anti-coagulants or antiplatelet drugs, emergency caesarean birth	
Mortality rate	7.1%	7.24%	1.6%	1.4%

Conclusion

- Incidence of RLACS was 1.3 per 1000 caesarean section.
- Hemorrhage was the most common indication for RLACS.
- Anemia, Previous caesarean section and hypertensive disorders of pregnancy were significant risk factors.
- The case fatality rate was 7.1%.

Take Home Message

- RLACS is indicator of severe maternal outcome and may be applied as a quality marker for obstetric care.
- RLACS should be considered in counselling and clinical decision making during caesarean section.

References

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- 3.Bhatia K, Columb M, Knight M, Vause S. Re-exploration following caesarean birth: a prospective national case-control study using the United Kingdom Obstetric Surveillance System (UKOSS) data collection system. *Anaesthesia*. 2024 Nov;79(11):1191-1200
- 4.Witteveen, T., Kallianidis, A., Zwart, J.J. *et al.* Laparotomy in women with severe acute maternal morbidity: secondary analysis of a nationwide cohort study. *BMC Pregnancy Childbirth* **18**, 61 (2018)