

Incidence, Risk Factors and Neonatal Outcomes Associated With Early Preterm Birth At Sultan Qaboos University Hospital, Oman

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Introduction

Despite recent advances in fetal medicine, preterm birth, defined by WHO as all births occurring before 37 completed weeks of gestation, remains a big challenge and worrisome among obstetricians worldwide [1].

Globally, preterm birth is extensively common in developing countries than developed countries and a count for 85% due to poor health care system and weak country infrastructure [2] [3].

Early preterm labor not only pose financial and psychosocial distress on the family and health system, but it may also lead to neonatal morbidities and mortality.

Although many sociodemographic, nutritional, biological, and environmental factors can increase the risk of spontaneous preterm birth, the cause is not fully understood.

Objectives

This study aims to determine the incidence; risk factors and neonatal outcomes associated with early preterm birth in comparison to late preterm birth at Sultan Qaboos University Hospital in Oman in one year period from January to December 2022.

Materials & Methods

- Retrospective Cohort Comparative study.
- In this study, early and late preterm births were compared with various risk factors, as well as neonatal outcomes identified as well.
- Data collected from Trak care system and delivery registry books.
- Data collection parameters include: maternal age, parity, medical history, BMI, current and previous obstetric histories, and neonatal outcomes.
- SPSS was used as analytic tool.
- The Chi-square and t-test were used to test the statistical significance.

Results

- Incidence of early preterm birth was found 2.7%.
- Various risks factors were identified associated with early preterm birth including extremes of BMI, anemia, maternal infection, sever preeclampsia, oligohydramnios and short cervical length.
- Moreover, we found that early preterm birth was associated with neonatal mortality and morbidity with $p < 0.001$.

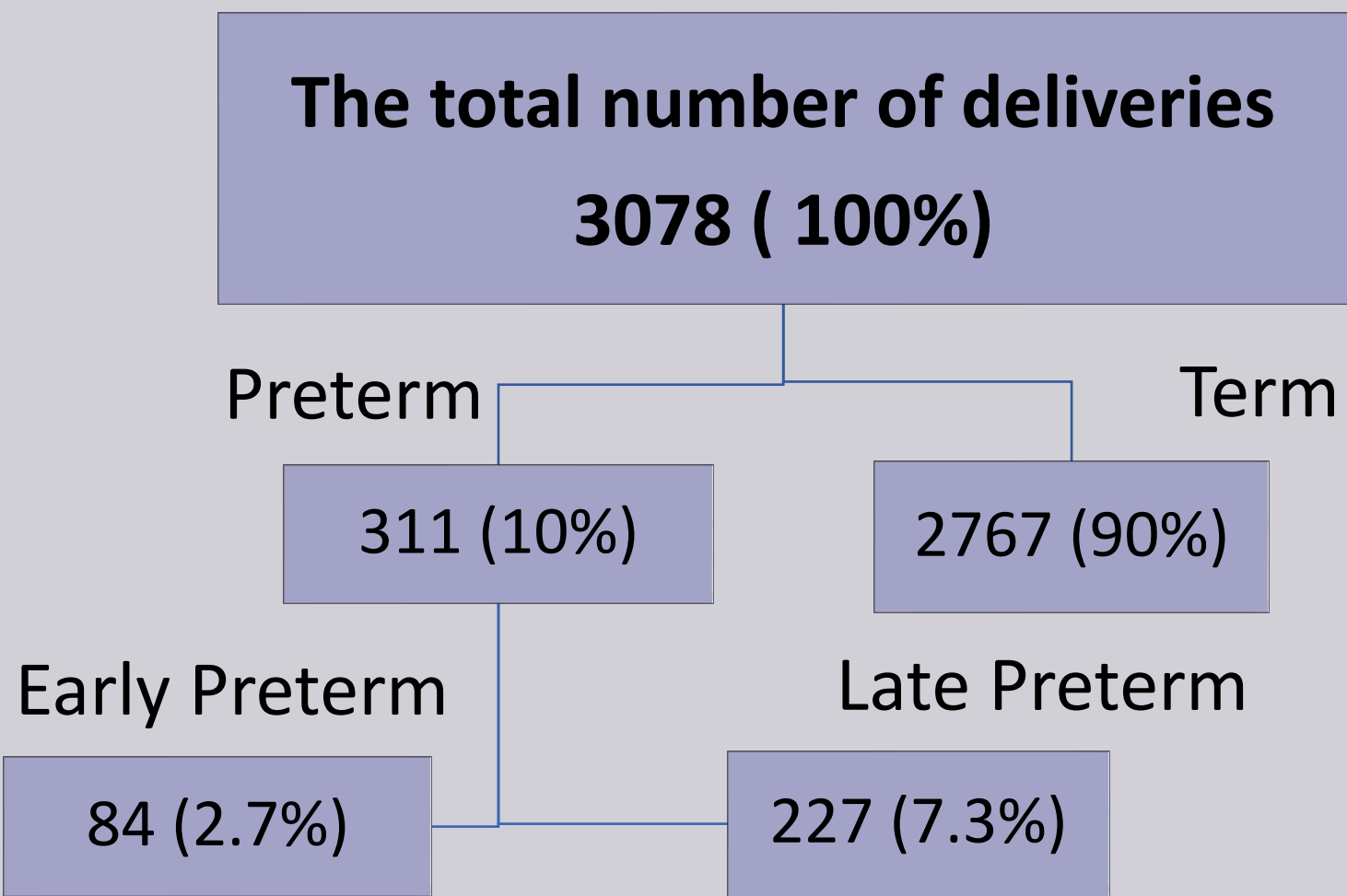


Figure 1: Methodology flowchart.

Neonatal outcomes		Early Preterm (n=84)	Late Preterm (n=227)	P wave
APGAR in 1 min		5.81	8.59	<0.01
APGAR in 5 mins		6.92	9.64	<0.01
Sex	Female	48 (57.1%)	91 (40.1%)	< 0.01
	Male	36 (42.9%)	136 (59.9%)	
Mortality		13 (15.5%)	1 (0.4%)	< 0.01
ARDS		58 (69%)	28 (12.3%)	< 0.001
Neonatal sepsis		25 (29.8%)	5 (2.2%)	<0.001
Cardiac disease		19. (22.6%)	12 (5.3%)	<0.001
IVH		18 (21.4%)	0 (0%)	<0.001
Anemia		25 (29.8%)	7 (3.1%)	<0.001

ARDS: Acute Respiratory Distress Syndrome, IVH: Intraventricular Hemorrhage.

Table 1: Neonatal outcomes in early preterm compared to late preterm.

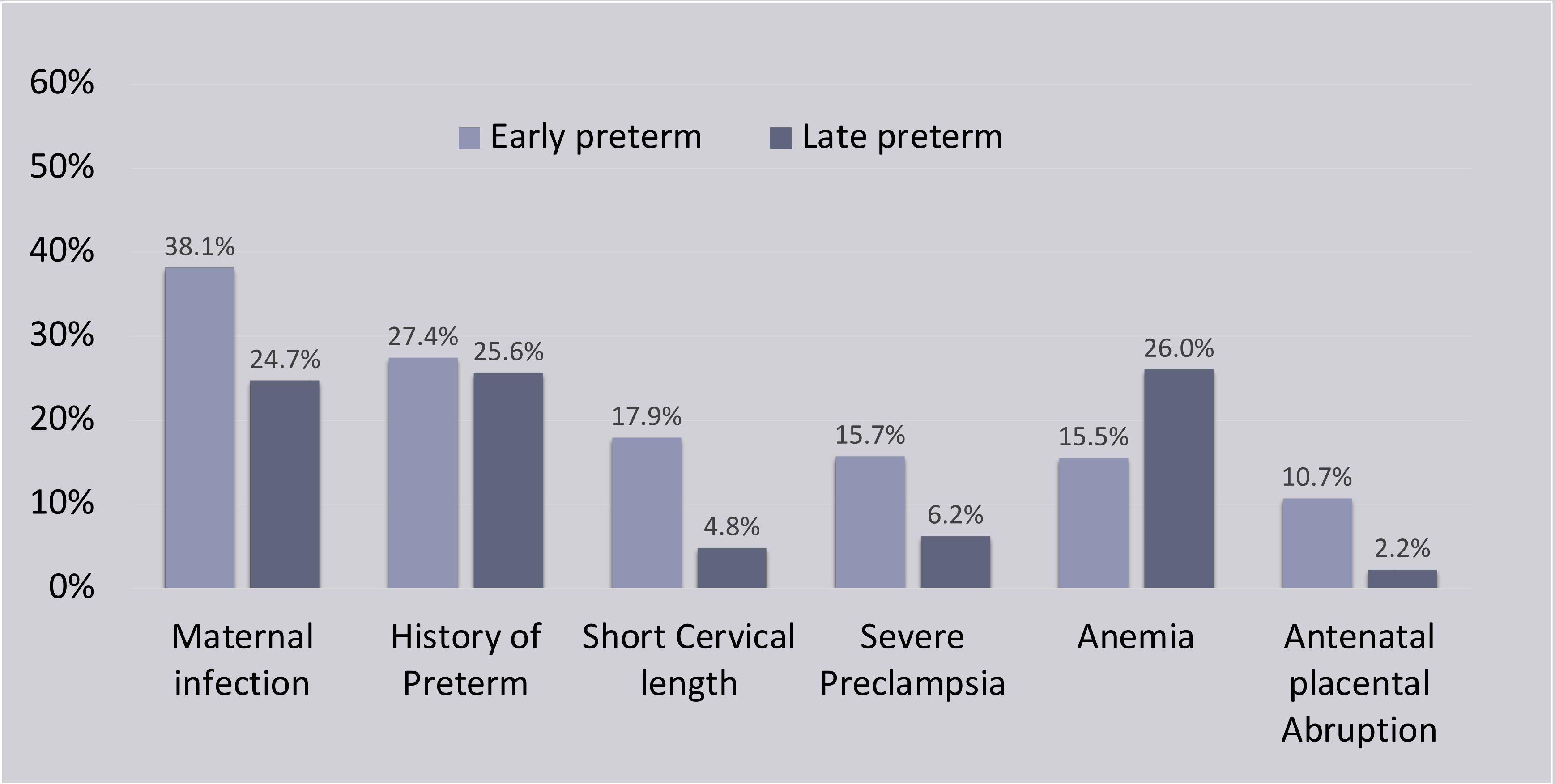


Figure 2: Maternal risk factors of early preterm compared to late preterm.

Conclusion

The current study indicated that various socio-demographic, nutritional, and obstetric risk factors are linked to early preterm birth.

Modifying these risk factors and implementing timely interventions could help reduce preterm births rates and related neonatal morbidity and mortality in Oman.

References

- [1] World Health Organization. "Preterm birth." World Health Organization, 2023.
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- [3] Beck, S., Wojdyla, D., Say, L., et al. (2010). The worldwide incidence of preterm birth: a systematic review of maternal mortality and morbidity. Bulletin of the World Health Organization, 88(1), 31-38.