

The Etiological Profile of Stillbirth and its Changing Trend in a 10-year Period at Sultan Qaboos University Hospital

Dr. Fatma Ali AL Hoqani¹, Dr. Adham Amer Al Rahbi², Dr Suha AL Ajmi ³ Dr. Gowri Vaidyanathan⁴

Obstetrics and Gynecology Residency Training Program, Oman Medical Specialty Board, Muscat, Oman. 2. College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman.

3. Obstetrics and Gynecology Medical Officer, Kawla Hospital, Muscat, Oman. 4. Department of Obstetrics and Gynecology, Sultan Qaboos University Hospital, Muscat, Oman.

Background

Stillbirth or intrauterine fetal death defined as fetal death occurred after 24 weeks of gestation or fetal birth weight of 500 grams or more. (1)

Stillbirth rate (SBR) defined as the number of stillbirths per 1000 births (live and stillbirths).

According to World Health Organization (WHO) data and statistics, it is estimated that 2.6 million stillbirths occurred annually worldwide with the rate of 18.4 per 1000 in 2015. (2)

Latest reported stillbirth rate in Oman is 8 stillbirth per 1000 delivery in 2018. (3)

Aim and rationale

This study aims to determine the etiology of stillbirth and its changing trend in a 10-year period (from January 2010 to December 2019) at Sultan Qaboos University Hospital (SQUH), to provide better clinical knowledge and to help formulate strategies to reduce preventable fetal loss in the country.

Ethical approval

Ethical approval for the study was obtained from research ethical approval committee at SQUH.

Method and material

Study was conducted as a retrospective descriptive cohort study. Participants were all stillbirth born at SQUH in study period from January 2010 to December 2019. Participant’s medical record number obtained from delivery book registry at department of obstetrics and gynecology at SQUH. Details of each case of stillbirth were obtained by reviewing medical record of each case.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS-version 22) software.

Results

In this study we found SBR was declining, with an overall rate of 5.7 per 1000 births. (figure1)

The leading etiology of stillbirth in our study was intrauterine growth restriction(IUGR) (58.2%) followed by gestational diabetes mellitus (24.9%). Breech presentation, polyhydramnios, maternal infection, placental conditions such as chorioamnionitis, abruption, pregnancy-induced hypertension, and cord accident were other causes. (figure2)

In this study, also we found there were 64.4% of the mothers had a previous pregnancy with history of IUGR, preterm, low birth weight, miscarriage, stillbirth or neonatal death. (figure3)

Also we found that the most common placental abnormalities seen in histopathology of stillbirth were placenta abruption and chorioamnionitis. (Figure 4)

Figure 1: Stillbirth rate per 1000 delivery

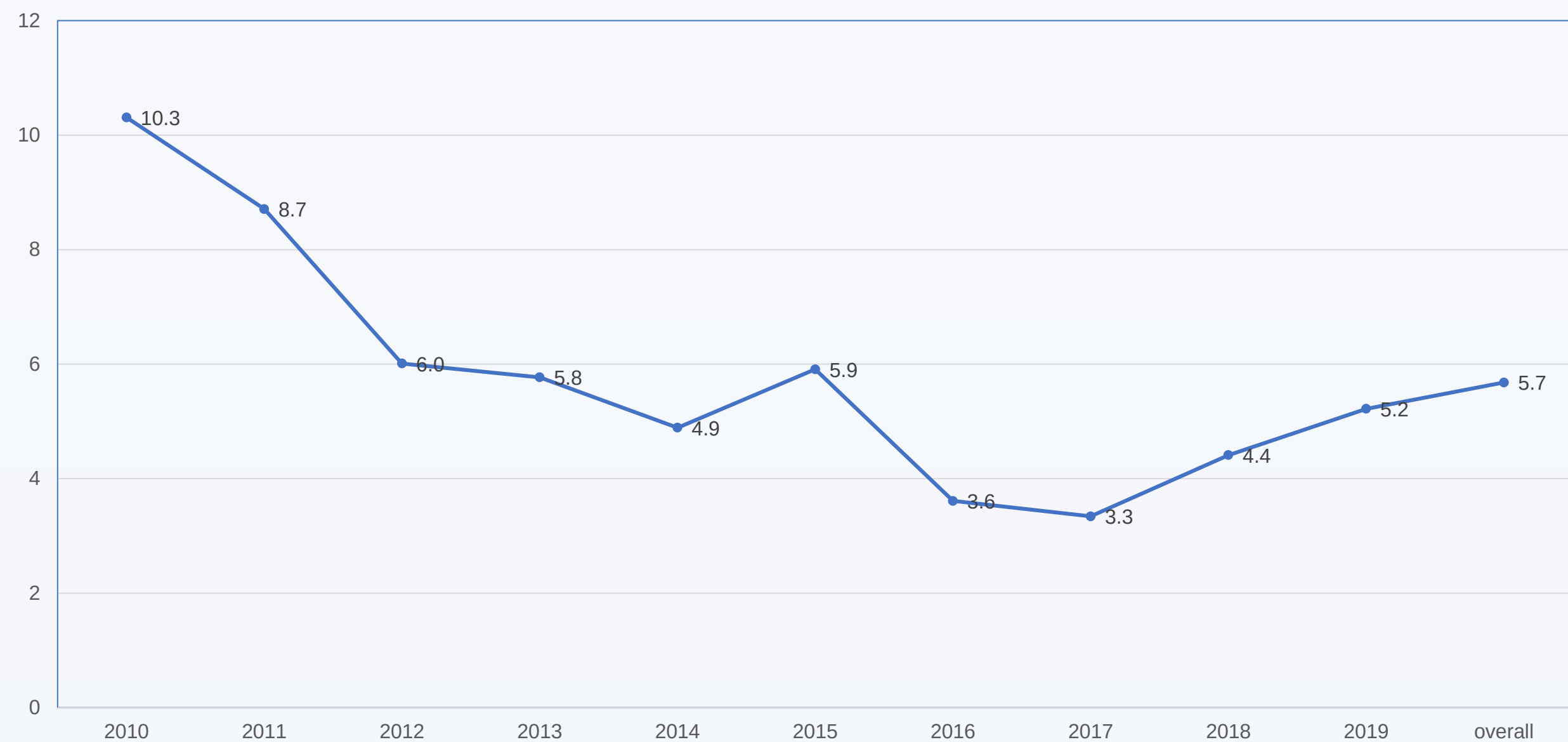


Figure 2: Most Common Etiologies of Stillbirth

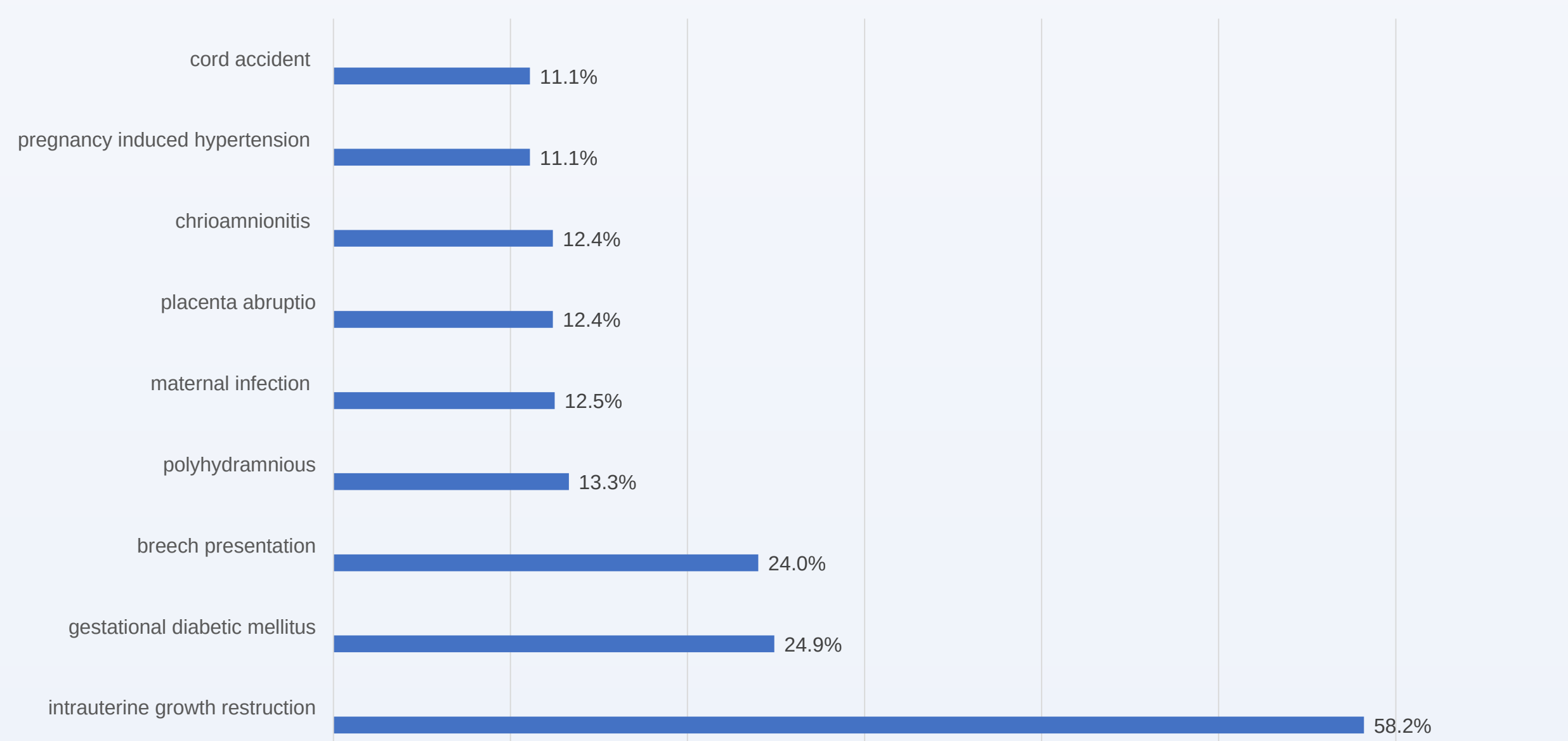


Figure 3: Past Obstetrical conditions

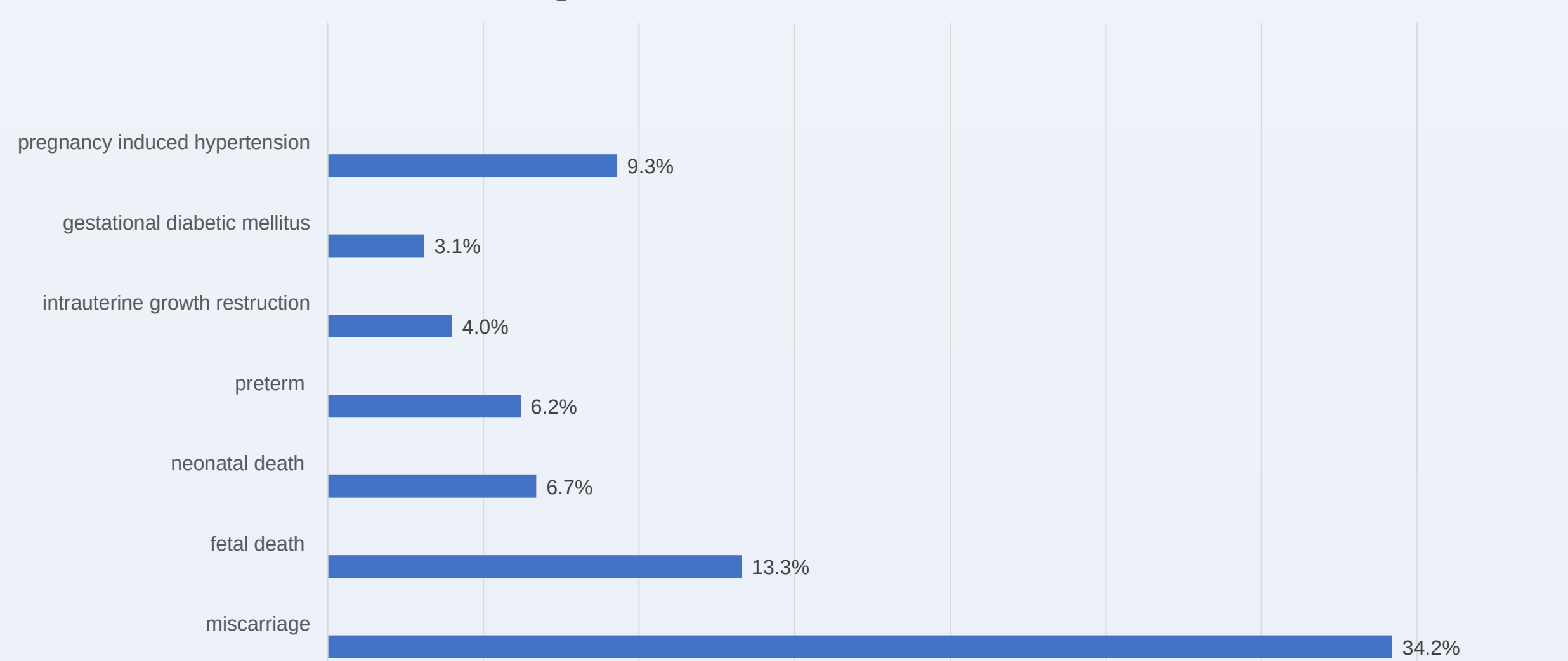
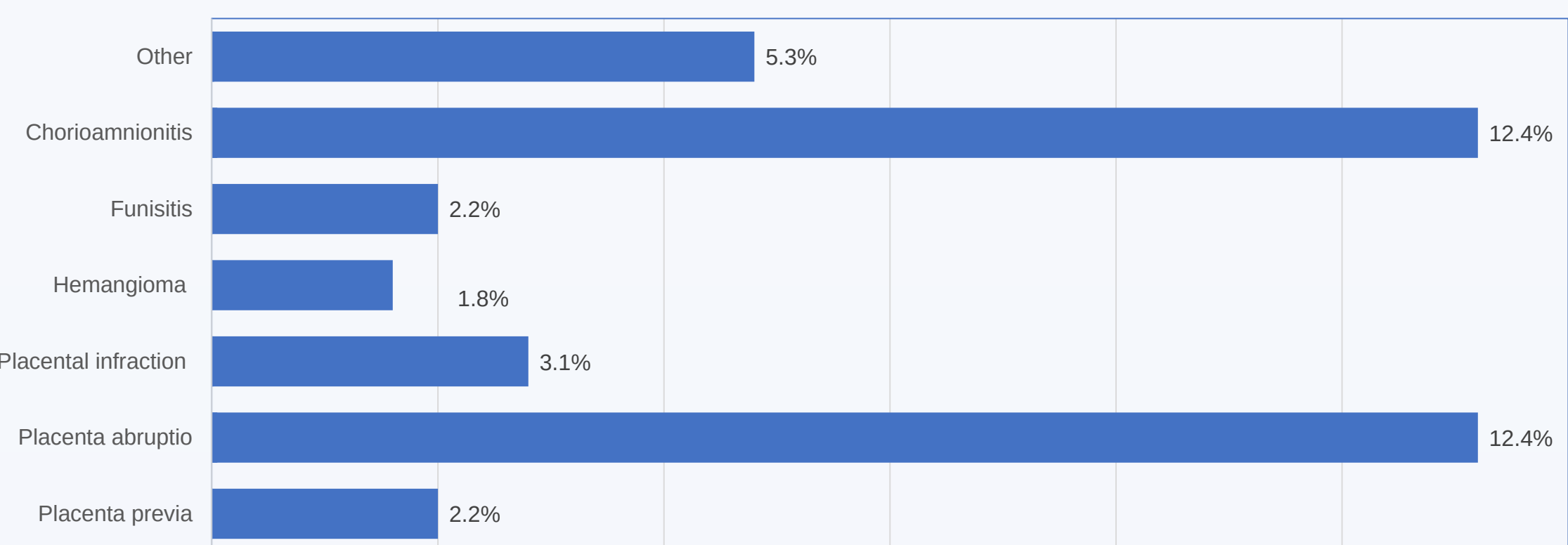


Figure 4: Placental abnormalities



Conclusions

SBR in the study period is declining, with an overall rate of 5.7 per 1000 births. Stillbirth is caused by multifactorial conditions that can be classified into three broad categories: fetal, placental, and maternal causes. Most stillbirth causes were preventable. Fetal monitoring for growth restriction and control of diabetes is likely to prevent most stillbirths.

Limitations

Main limitation of the study is missing data as our study was retrospective study. Also overlapping between etiology make it difficult to assign specific etiology to each case of stillbirth.

References

1. Smith GC, Fretts RC. Stillbirth. Lancet 2007;370:1715-1725.
2. Blencowe, H. et al. National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. Lancet Glob Health 4, 98-108 (2016).
3. MOH (2018) ‘chapter two Health Status Indicators’, in MOH annual report.