

Placenta accreta spectrum temporal trends using the Robson Ten-Group Classification

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INTRODUCTION

Placenta accreta spectrum (PAS) is a major obstetric disorder where the trophoblast attaches to scarred or exposed myometrium as a result of a deficiency in the decidua basalis. It is graded according to the level of invasiveness as accreta, increta and percreta. The Robson Ten-Group Criteria is an obstetric population classification system based on: gestational age, parity, previous Caesarean delivery, onset of labour, plurality and foetal presentation. In obstetric research, it is used to compare perinatal events within obstetric subpopulations. However, the Robson classification system has never been used to study PAS. Analysing PAS through the Robson criteria may provide valuable insight on PAS incidence rates over time.

OBJECTIVES

To describe the incidence rate and temporal patterns of histologically diagnosed placenta accreta spectrum (PAS) using the Robson Ten-Group criteria.

METHODS

Patients with a histopathological diagnosis of PAS between the years 2015 and 2020 were identified through word search of histopathology reports at Cork University Maternity Hospital in Ireland. We also recorded the tissue specimen type (placenta, hysterectomy, local surgical resection or curetting). We collected the total number of placentas analysed each year. Using the patients' electronic health records, we classified PAS patients into the Robson groups. The PAS incidence rates were described as per maternities (%) and per placentas (%). Descriptive statistics were used to analyse data.

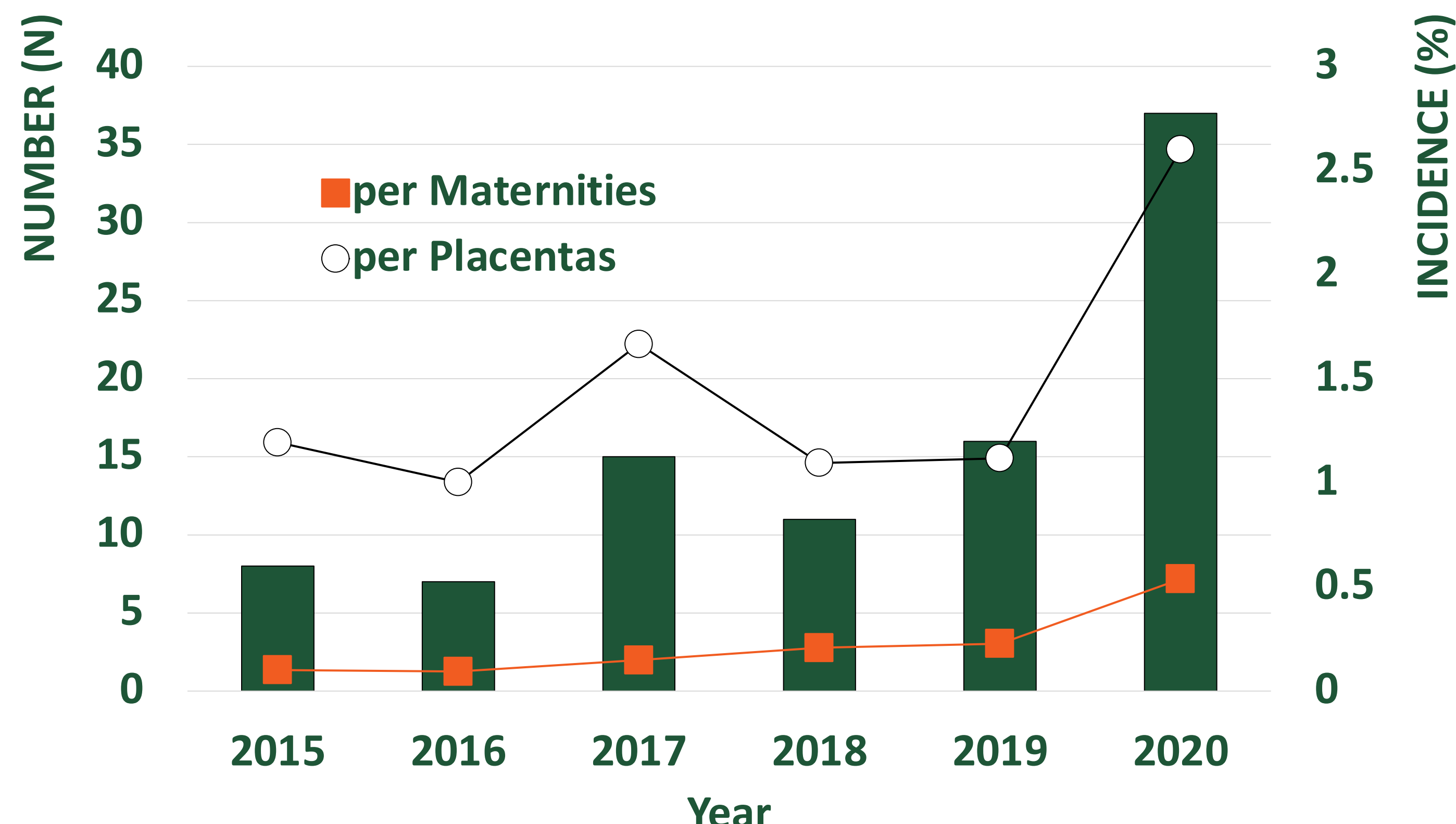


FIGURE 1 - Bar graph (left axis) demonstrating annual number of patients with a histopathological diagnosis of placenta accreta spectrum and line chart (right axis) showing the annual incidence per maternities and per placentas analysed.

RESULTS

A total of 94 histopathology reports diagnosed PAS; but, only 77 patients were suitable for Robson grouping. The majority of reports described PAS in placentas (89.4%) with the remainder of reports diagnosing PAS in samples from hysterectomies (7.4%), local surgical resection (1.1%) and curetting (2.1%). Between the years 2015 and 2020, the incidence of PAS per maternities has increased from 0.10% to 0.55% (10.1 to 53.8/10,000 maternities) and PAS per placentas increased from 1.19% to 2.60% (Figure 1). The largest single group contributors to the number of PAS patients identified were classified as group 5 (20.8%); but, patients without prior Caesarean delivery (groups 1-4 and group 6) included 53.2% of PAS patients (Figure 2).

TABLE 1 - Robson Ten-Group criteria of patients with placenta accreta spectrum (PAS) according to year of diagnosis.

Robson Group	Group Description	Year				Total
		2017	2018	2019	2020	
1	Nulliparous, singleton cephalic, term, spontaneous labour onset	0	2	1	2	5
2	Nulliparous, singleton cephalic, term, induced labour or prelabour Caesarean section	1	2	4	6	13
3	Multiparous without a previous Caesarean section, singleton cephalic, term, spontaneous labour onset	2	1	0	4	7
4	Multiparous without a previous Caesarean section, singleton cephalic, term, induced labour or prelabour Caesarean section	3	2	1	9	15
5	Multiparous with a previous Caesarean section, singleton cephalic, term	1	2	6	7	16
6	Nulliparous, singleton breech	0	0	0	1	1
7	Multiparous, singleton breech	0	0	0	0	0
8	Multiple pregnancy	4	0	1	5	10
9	Transverse or oblique lie	0	0	0	1	1
10	Singleton, preterm	4	1	2	2	9
Total		15	10	15	37	77

DISCUSSION

This was the first study to use the Robson Ten-Group criteria to analyse PAS incidence over time. The incidence of PAS in our unit increased during the years 2015 to 2020. Describing PAS incidence per placentas provides further insight on PAS rates while considering annual specimen processing numbers. Most patients with PAS had no previous Caesarean deliveries implying that other risk factors for PAS may be more important. Newer reporting guidelines may influence PAS incidence and the interpretation of PAS risk factors according to specimen type.

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