

Impact of definition on recurrent pregnancy loss service provision: a retrospective study

Elizabeth Tunney^{1,2}, Ronan Daly^{1,2}, Patrick Dicker^{1,2}, Zara Molphy¹, Alex Dakin^{1,2} Rebecca Boughton^{1,2}, Fergal D.Malone^{1,2} & Karen Flood^{1,2}

1. Department of Obstetrics and Gynaecology, RCSI University of Medicine and Health Sciences, Dublin, Ireland.
2. Rotunda Hospital, Parnell Street, Dublin 1, Ireland.



Introduction

Table 1: Patient population/Resource Allocation after criteria met and definition applied

Recurrent pregnancy loss (RPL) occurs in 1-3% of couples trying to conceive depending on the definition used.(1) The number of previous pregnancy losses impacts the likelihood of having a subsequent livebirth. However, there is global inconsistency regarding the appropriate definition of RPL which affects clinical practice and management. This international ambiguity centers around the number of previous losses (two versus three), whether the pregnancy loss was consecutive or interspersed with a livebirth and therefore non-consecutive and finally the type of pregnancy in question (intra-uterine, pregnancy of unknown location, ectopic, molar or biochemical pregnancy)

Study Aim

The primary aim of this study was to theoretically determine the impact of the variation in definitions on service provision and resource allocation within a large RPL cohort attending a dedicated RPL clinic.

Study Design

A retrospective cohort analysis of patients attending the ACORN clinic, a specialized RPL clinic at Ireland’s largest obstetric tertiary referral centre responsible for 9,000 deliveries annually, over a three-year period (2021 – 2023). We applied the three most cited definitions of RPL, the Royal College of Obstetricians and Gynaecologists (RCOG) definition, the European Society of Human Reproduction and Embryology (ESHRE) definition, to our patient cohort. The Royal College of Physicians in Ireland (RCPI) definition of RPL was revised in 2023. We then assessed the impact of definition modifications on service provision and resource allocation in the RPL context.

	RCOG Definition (n=519)	ESHRE definition (n=710)	P-value
Number of Patients	519	710	<0.001
Age (years)	36 [20, 47]	35 [21,44]	
Weight (kg)	75 [49,136]	73 [49,121]	
Parental Karyotype Performed (%)	76 (15%)	72 (10%)	0.016
HSG performed (%)	75 (14%)	94 (13%)	0.542
Products of Conception Cytogenetic Analysis (%)	135 (26%)	146 (21%)	0.024
Recurrent Miscarriage Blood Panel (%)	490 (94%)	670 (94%)	0.972

Results

During the study period, **814 women** attended the RPL clinic during the study period. Following attendance at the specialized ACORN clinic, **71% (580/814) achieved a pregnancy and 60% (334/580) achieved a livebirth**. When comparing RPL definitions, **after applying the ESHRE definition, a total of 710 women** remained in the retrospective analysis with 13% (n=104) removed. When applying the **RCOG definition, only 519 women remained as appropriate attendees with a total of 36% (n=295)** of the cohort removed. After definition application, patient demographics in the cohorts remained unchanged. Evidently, the need to provide resources and investigations was increased in the larger ESHRE patient cohort.

The cumulative difference of 295 patients in the WHO/RCOG group and 104 patients in the ESHRE group was deemed statistically significant (p<0.001*).

Conclusion

An international consensus on the definition of recurrent pregnancy loss is required. This will ensure consistent resource allocation and help provide accurate, earlier diagnosis through appropriate clinical referral for women experiencing recurrent pregnancy loss. In addition, discrepancy in definition yields impaired research potential into this high-risk, clinically significant patient group. There is a demonstrated need for further epidemiological studies on the effect of various RPL definitions on diagnosis, prognosis or treatment.

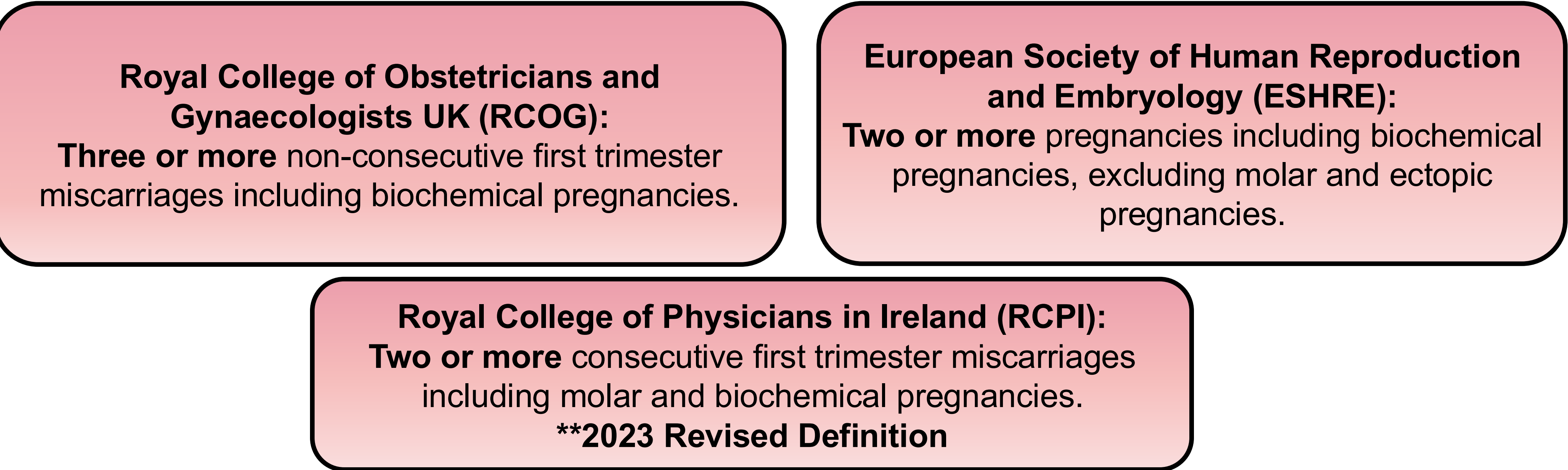


Figure 1: Working Definitions of Recurrent Pregnancy Loss

References
1. van Dijk MM, Kolte AM, Limpens J, Kirk E, Quenby S, van Wely M, Goddijn M. Recurrent pregnancy loss: diagnostic workup after two or three pregnancy losses? A systematic review of the literature and meta-analysis. Hum Reprod Update. 2020 Apr 15;26(3):356-367. doi: 10.1093/humupd/dmz048. PMID: 32103270; PMCID: PMC7161667.