Are genetic results improving RPL management? A clinical audit

Emily K. Guernsey, Gisely Torres, Sanaa Nakad Borrego, Anagha Alapati, Carrie Fitzpatrick, Sana M. Salih

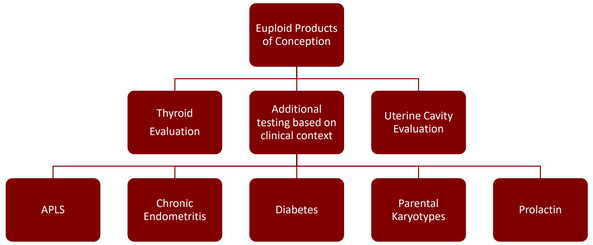
THE UNIVERSITY OF CHICAGO

Introduction

- ASRM recently updated recurrent pregnancy loss (RPL) guidelines to prioritize chromosomal analysis of products of conception (POC) as the first step in evaluation of RPL. (1)
- Selective workup is recommended only for those with euploid POC. (2-4)
- We sought to identify a) who was undergoing chromosomal analysis of POC and b) what subsequent evaluation was performed for those with and without RPL.

Methods

- Single-site retrospective cohort of singleton pregnancy losses before 20 weeks with euploid POC.
- Excluded induced abortions and losses associated with known fetal anomalies.
- Compared patients with one loss before 20 weeks to those with RPL.
- Analyzed completion of RPL workup recommended by ASRM.



Results

- 119 individuals were available for analysis. 66 (55%) met criteria for RPL.
- Groups varied only in their pregnancy histories (Table 1).
- In the no RPL group, 11 losses (21%) occurred in the first trimester. Chromosomal analysis was performed for patient preference (n=9) and IVF pregnancy (n=2).
- Overall, there were low rates of workup completion across both groups (Figure).
- Only completion of APLS testing varied between those with and without RPL (p=0.001).
- An etiology of RPL was identified in 20% of patients with euploid pregnancy loss (Table 2).

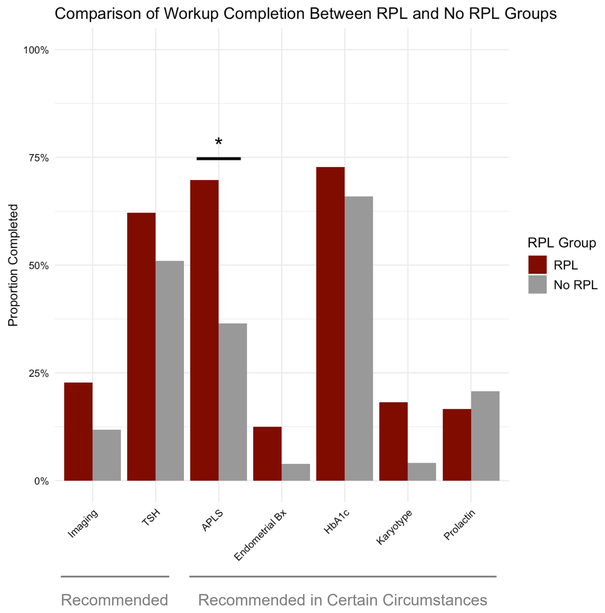


Table 1: Baseline Characteristics by RPL Status

	RPL (n=66)	No RPL (n=53)	p-value
Maternal age, in years	32 (28-37)	30 (24-35)	0.28
Self-reported race			
Asian	1 (2)	4 (8)	
Black	39 (59)	33 (62)	0.18
White	21 (32)	10 (19)	
>1 race or did not report	5 (7)	6 (11)	
Latinx	4 (6)	3 (6)	1.00
Pre-pregnancy BMI (kg/m^2)	32 (25-39)	29 (23-38)	0.16
Pregnancy history			
Gravidity	4 (3-6)	3 (2-4)	**<0.001**
Term	1 (0-2)	1 (0-2)	0.66
Preterm	0 (0)	0 (0-1)	0.52
Spontaneous Abortions	2 (2-3)	1 (1-2)	**<0.001**
Insurance			
Government payor	29 (44)	27 (51)	0.57
Private or self-pay	37 (56)	26 (49)	
Gestational age at loss, in weeks	15 (8-17)	15 (13-17)	0.10
Management of Loss			
Expectant	10 (15)	13 (25)	0.18
Medical	9 (14)	10 (20)	
Surgical	47 (71)	28 (55)	
Cervical Insufficiency	4 (6)	1 (2)	0.50
PPROM	17 (26)	17 (32)	0.58

Results displayed as median (IQR) or n (%).

Conclusions

- Our current management of pregnancy loss is not aligned with ASRM guidelines.
- The high rate of POC testing among patients without RPL and the similar workups between those with and without RPL suggest we may not be appropriately identifying patients with RPL.
- One major area for improvement is rates of uterine cavity assessment.
- The percentage of unexplained RPL in our cohort is higher than previous estimates, likely secondary to incomplete RPL evaluation. (5)
- Further work is needed to identify barriers to appropriate evaluation for RPL.

Table 2: Outcomes for Patients with Euploid RPL

Outcome	n (%)
Unexplained RPL	53 (80)
Explained RPL	
Uterine Cavity	0
Thyroid	0
APLS	5 (8)
Chronic Endometritis	3 (5)
Diabetes	4 (6)
Maternal karyotype	0
Prolactin	1 (2)
Patient Evaluated by REI	21 (32)
Diagnosed with RPL	34 (52)
Diagnosed with Infertility	14 (21)
Subsequent Live Birth	15 (23)
Live Birth After ART	3 (20)

Scan for references!