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VALIDATION OF PROGNOSIS-BASED IVF GRANT SELECTION CRITERIA

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OBJECTIVE

To validate a scoring system for prognosis-based IVF grant allocation.

MATERIALS AND METHODS

The Chicago Coalition for Family Building is a 501(c)3 awarding donated IVF cycles and financial grants of up to \$10,000 for fertility treatment. Individuals and couples with an annual income of <\$200,000 and a need for IVF are eligible to apply.

Applications are reviewed annually. Two board certified REIs scored each application on medical prognosis (up to 55 points, Table) and personal characteristics (up to 45 points). Scores were averaged and grants awarded to applicants with the highest scores in each application cycle.

Cycle outcomes for 2015-2019 recipients were reviewed. Live birth rate (LBR) after first embryo transfer (ET) and cumulative live birth rate (CLBR) were analyzed and compared with 2018 SART national averages using a one sample *t* test.

RESULTS

A total of 435 applications were reviewed with 59 grants awarded for 51 autologous IVF cycles, 6 donor egg cycles, and 2 gestational carrier cycles resulting in 43 live births (LBR 61.9%, CLBR 72.9%).

Among autologous cycles, mean age was 31.8 years (*s* = 3.9 years) and LBR and CLBR were 59.2% and 68.% vs. 29.0% and 37.6% among SART cycles (*p*<0.0001 and <0.0001), respectively. A sub-analysis of applicants age <35 (*n* = 42) revealed LBR and CLBR of 62.8% and 71.4% vs. 41.4% and 55.6% among SART cycles <35 (*p* = 0.0058 and 0.04), respectively.

Table. Medical criteria for prognosis-based scoring of IVF grant applicants

Ovarian reserve ^{a,b} (35 points)				BMI ^c (5 points)		Uterine factor ^{d,e} (5 points)	Male factor ^f (5 points)	Children (5 points)
Points	Age	AMH	FSH	Points	BMI			
1	>40	0.5	15	1	40 or ≤ 18.5	1-5 points based on medical history	1-5 points based on medical history	5 points to applicants without living children
3	38-39	0.5-1	10-15	2	35-39			
5	35-37	1-1.5	<10	3	30-34			
10	31-34	1.5-2		4	25- 29			
15	≤ 30	>2		5	18.5-24			

AMH = anti-Mullerian hormone, FSH = follicle stimulating hormone, BMI = body mass index

^aDonor egg: 35 points

^bAutologous cycle applicants excluded for ≥ 42 years, AMH < 0.5ng/dL, FSH >15mIU/mL, or ≥ 3 prior failed fresh IVF cycles

^cApplicants excluded for BMI > 40 kg/m²

^dApplicants excluded for ≥ 20 week size uterus, submucosal fibroids, intramural fibroids ≥ 5 cm, or severe Asherman's

^eGestational carrier: 5 points

^fDonor sperm: 5 points

CONCLUSIONS

A scoring system incorporating age, ovarian reserve, BMI, uterine factors, and semen analysis identified grant applicants with a high likelihood of achieving live birth.

IMPACT STATEMENT

Most IVF grant programs select recipients through a lottery system or on the basis of personal characteristics. A prognosis-based scoring system should be considered for IVF grant allocation to maximize live birth rate in a limited resource setting.