

STATIN USING PRIOR TO IN VITRO FERTILIZATION TREATMENT MAY IMPROVE PREGNANCY OUTCOME IN WOMEN WITH DYSLIPIDEMIA

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Abstract Body

Introduction: In the literature, hyperlipidemia has been shown to decrease pregnancy rates in both obese and polycystic ovaries syndrome (PCOS) patients. To the best of our knowledge, there is no study showing the effect of statin using prior to In vitro fertilization (IVF) treatment on the pregnancy outcome. Therefore, in this study, we aimed to identify whether using statins may increase chance of pregnancy. **Material and Methods:** This retrospective case control study was approved by the Institutional Review Board of Baskent University (KA19/50). The study included 70 infertile patients (mean age:34.6±0.5) with dyslipidemia (level of total cholesterol ≥200 mg/dl or low-density lipoprotein (LDL) ≥130 mg/dl) who were subjected to IVF attempt and were managed by lipid lowering diet. Ten mg pravastatin (pravachol DEVA, Istanbul, Turkey) was added to therapy in case of resistant hypercholesterolemia in 15 days. This regime was maintained at least 2 months prior to IVF and continued until the day of embryo transfer. **Results:** Fifty one patients were treated with diet only and the remaining nineteen patients were offered both diet and statin. The univariate analysis showed that statin use improved pregnancy outcome (p:0.030). Besides this, age, serum anti-müllerian hormone level, BMI, previous IVF trial number and whether decreased serum LDL or total cholesterol level to normal range did not differ for pregnancy outcome after IVF in patients with dyslipidemia. According to multivariate analysis, statin use was found independently and statistically significant for pregnancy outcome after IVF in patients with dyslipidemia (HR 1.883; 95% CI 1.017–3.488; P:0.44) **Conclusion:** The findings of the study support that statin may help to improve pregnancy outcome, regardless of whether decreased serum low-density lipoprotein or total cholesterol level. As a result, we speculated that it should be routine to investigate the lipid profile in every IVF patient and must be treated with statin, if necessary.

Abstract image

Table. Univariate and multivariate analyses of pregnancy results after IVF – Chi-square and Logistic Regression Analyses

	Univariate Analysis					Multivariate Analysis		
	Pregnancy (+)		Pregnancy (-)		p-value	HR	95% CI	p-value
	N	%	N	%				
Age (year)								
<35	21	58,3	15	41.7	0.241			
≥35	16	47.1	18	52.9				
Anti-Müllerian Hormone (ng/ml)								
<1	4	33.2	8	66.7	0.121			
≥1	33	56.9	25	43.1				
In-Vitro Fertilization Treatment number								
1	21	53.8	18	46.2	0.522			
>1	16	51.6	15	48.4				
Body Mass Index (kg/m2)								
<25	17	56.7	13	43.3	0.378			
≥25	20	50.0	20	50.01				
Statin using								
Present	14	73.7	5	26.3	0.030	1.883	1.017 – 3.488	0.044
Absent	23	45.1	28	54.9				
Low-density lipoprotein (mg/dl)								
Decreased	25	52.1	23	47.9	0.527			
Not decreased	12	54.5	10	45.5				
Total cholesterol (mg/dl)								
Decreased	17	53.1	15	46.9	0.579			
Not decreased	20	52.6	18	47.4				