

evaluation of effect of vitamin D supplementation on serum AMH in vitamin D deficient PCOS women

S Sharma (IN) [1]

Context-PCOS is characterized by oligo or anovulation, clinical or biochemical hyperandrogenemia, and/or polycystic ovaries on ultrasonography. Vitamin D plays a role in ovulation in PCOS.

Objective-To correlate vitamin D levels with serum AMH after vitamin D supplementation in vitamin D deficient PCOD women.

Study Design-Observational, comparative and interventional study.

Methods-A total of 630 incident cases of PCOS were enrolled after considering inclusion and exclusion criteria. Out of this, 30 patients each without (Group 1) and with vitamin D deficiency (Group 2) were selected using purposive sampling design to study the impact of vitamin D deficiency on Serum AMH levels. In the intervention group, 60,000 IU once weekly vitamin D supplementation was done for 8 weeks. After eight weeks, vitamin D and Serum AMH levels were reassessed. Data was analyzed using Statistical Package for Social Sciences Version 21.0.

Patients-All consenting females diagnosed with PCOS according to Rotterdam Criteria in the age group of 16-40 years were recruited.

Intervention-PCOS women having vitamin D (25OHD) levels (<20 ng/ml) were given oral vitamin D3: 60,000 IU once weekly for 8 weeks.

Main Outcome Measures-Change in AMH concentration after vitamin D3 supplementation. Targeted AMH concentration was <4 ng/ml.

Results-In Group 1, 23.3% women had AMH levels <4 ng/ml whereas 20.0% women in Group 2. The correlation between vitamin D and AMH levels was weak and not significant statistically ($i^2=0.090$; $p=0.495$). On evaluating this correlation separately in Groups 1 and 2, it was found to be weak but statistically not significant ($i^2=0.129$; $p=0.497$) in Group 1 whereas in Group 2 was found to be mildly positively correlated yet statistically not significant ($i^2=0.344$; $p=0.063$). Following intervention, mean vitamin D levels changed from 12.53 ± 4.32 ng/ml to 33.59 ± 8.75 ng/ml, thus showing a significant change. Vitamin D levels were normalized (>20 ng/ml) in all the women. A statistically significant change in AMH levels was observed with mean values changing from 4.88 ± 2.06 ng/ml to 3.79 ± 2.00 ng/ml. The proportion of women with normalized AMH levels (<4 ng/ml) increased from 20% to 80% following intervention. In the vitamin D deficient group, following intervention, the correlation between vitamin D and AMH levels was weak and not significant statistically.

Conclusions-Vitamin D levels have a regularizing effect on ovarian reserves among PCOS patients with vitamin D deficiency.

