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# Vitamin-D supplementation increased 25(OH) D serum levels but did not reach normal range in North Sumatera women with vitamin D receptor gene polymorphism

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**Background:** A large proportion of women living in tropical regions experience Vitamin D deficiency especially in North Sumatera, Indonesia and lifestyle being one of the predisposing factors. Other causes may be attributed to the presence of polymorphism in the Vitamin D receptor gene TaqI and BsmI.

**Objective:** To assess the effect of 1000 IU vitamin D supplementation on 25(OH) D serum and calcium levels in North Sumatera women with vitamin D receptor gene polymorphism (TaqI and BsmI).

**Design:** The study was a parallel clinical trial, 36 subjects with vitamin D receptor gene polymorphism (TaqI and BsmI) were selected using certain criteria. The subjects were divided into two groups using block randomization. 19 subjects in vitamin D group received 1000 IU vitamin D supplementation per day and dietary counseling (D), while 17 subjects in counseling group received placebo and dietary counseling (C). Serum 25-hydroxyvitamin D and calcium levels were assessed on day 0 and 28. Before and after treatment, dietary intake was assessed with 2x24 hour recall methods.

**Results:** 19 subjects in D group and 17 subjects in C group completed the study. There were no significant differences in baseline data both groups. After 28 days treatment, there were no significant differences in nutrients intake in two groups except vitamin D intake in D group. There was significant increase in 25(OH)D serum level in D group while no change was observed in the C group (p=0.04). Serum calcium concentration showed no significant change in both groups. There was significant difference between both groups but all subjects did not reach normal value in 25(OH)D serum level (normal value > 30ng/mL).

**Conclusions:** The result shows that vitamin D deficiency can occur in women with Vitamin D receptor gene polymorphism even already supplemented with 1000 IU vitamin D.

## Biography

Dina Keumala Sari has her expertise in vitamin D and polymorphism vitamin D receptor gene. Her interest in vitamin D creates a theory about microevolution in North Sumatera women in Indonesia.

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**Notes:**