

## Vitamin D<sub>3</sub>, affective-related disorders and perimenopause

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*Motivation and Aim:* Mood disorders in perimenopausal period are common and considered as a public health issue. A strategy to alleviate the mood disorders associated with perimenopause is menopausal hormonal replacement therapy (MHT) [1]. However, controversial results related to the effectiveness of such treatment have been frequently reported. There has been longstanding interest in the role of «natural» treatments for depression and mood disorders, such as nutritional and dietary products. Among other nutraceuticals, one of such «natural» substances for treatment of affective-related state could be vitamin D [2].

*Methods and Algorithms:* This study evaluated the effect of cholecalciferol supplementations in high doses (60000-100000 IU, per os) alone or in a combination with standard MRT on anxiety/depression scores and hormonal status for perimenopausal women. The women treated with cholecalciferol in 80000 and 100000 IU doses alone or in a combination with MHT had greater reduction in anxiety scores than the control group. The cholecalciferol-treated groups of perimenopausal women had significantly higher 25-hydroxyvitamin D<sub>3</sub> concentrations and gonadal hormones levels in the blood serum in comparison to the control group.

*Results:* In 3 months, a combined administration of cholecalciferol in different doses and MHT resulted in summarization of positive effects of both treatments. It means that affective-related profile was lower in women given with such combined therapy. In 6 months, affective-related profile in perimenopausal women treated with combination of cholecalciferol at different doses and MHT has been completely eliminated. Simultaneously, we found that combined administration of cholecalciferol in different doses and MHT also improved hormonal state in perimenopausal women.

*Conclusion:* The present trial showed that consuming high doses of vitamin D<sub>3</sub> daily was effective in decreasing depression and anxiety levels in perimenopausal women. Furthermore, this is the first clinical study to show a beneficial effect of chronic Vitamin D<sub>3</sub> in high doses administration on anxiety/depression scores in perimenopausal women. This work promotes more effective creating of the novel therapeutic targets and strategies for affective-related state treatment in perimenopausal women.

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### References

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