



Editorial

A New Vitamin D Receptor Agonist, VS-105: A Promising Path to Control of Postmenopausal Osteoporosis

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Vitamin D refers to a group of fat-soluble secosteroids that are crucial for bodily functions. Increasingly evidence has shown their importance in regulating the process of cancer,¹ cardiovascular diseases, and immune responses,^{2,3} as well as postmenopausal osteoporosis (PMO).⁴ PMO is a metabolic bone disorder that is characterized by decreased bone mass and frequent bone fractures, and affects about 49 million women worldwide.⁵ Despite the variation in osteoporosis phenotypes, osteoporosis is attributed to estrogen deficiency. Clinically, osteoporosis can be diagnosed by assessing bone mineral density.⁶ Although there are various drugs, such as calcitriol, paricalcitol, abaloparatide and rommsozumab, available for PMO treatment, the discovery of new therapeutic drugs remains an urgent need.

In recent years, a vitamin D receptor agonist, VS-105, has been developed and shows potential for the intervention of PMO.⁷ In fact, a recent article published in the *Journal Exploratory Research in Pharmacology* entitled “A Novel Vitamin D Receptor Agonist, VS-105, Improves Bone Mineral Density without Affecting Serum Calcium in a Postmenopausal Osteoporosis Rat Model”. The authors demonstrated that VS-105 was relatively safe and significantly improved bone mineral density, but did not change serum calcium and phosphate levels in rats. In addition, the therapeutic effects of VS-105 on bone mineral density were comparable to calcitriol.⁷ These novel findings are important as a small increase in phosphate levels can be harmful.⁸ These findings extend previous observations in that the administration of VS-105 did not cause hypercalcemia, hyperphosphatemia, or vascular calcification in rodents was found to be safer than paricalcitol.⁹ Together, these data suggest that VS-105 may be safe and effective for the intervention of PMO, as well as chronic kidney diseases. Currently, there are ongoing clinical trials to test the safety and pharmacokinetics of VS-105 in human subjects. If successful, this drug should be rapidly translated from the bench to the bedside for the intervention of women with PMO. Overall, VS-105 is a promising adjunctive

therapy or alternative strategy to improve bone mineral density in patients with PMO.

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Conflict of interest

None.

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Abbreviations: VS-105, vitamin D receptor agonist; PMO, postmenopausal osteoporosis.

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