

# Multiple Sclerosis and Renal Calculi, What Does Vitamin D Have to Do with It?

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## Background

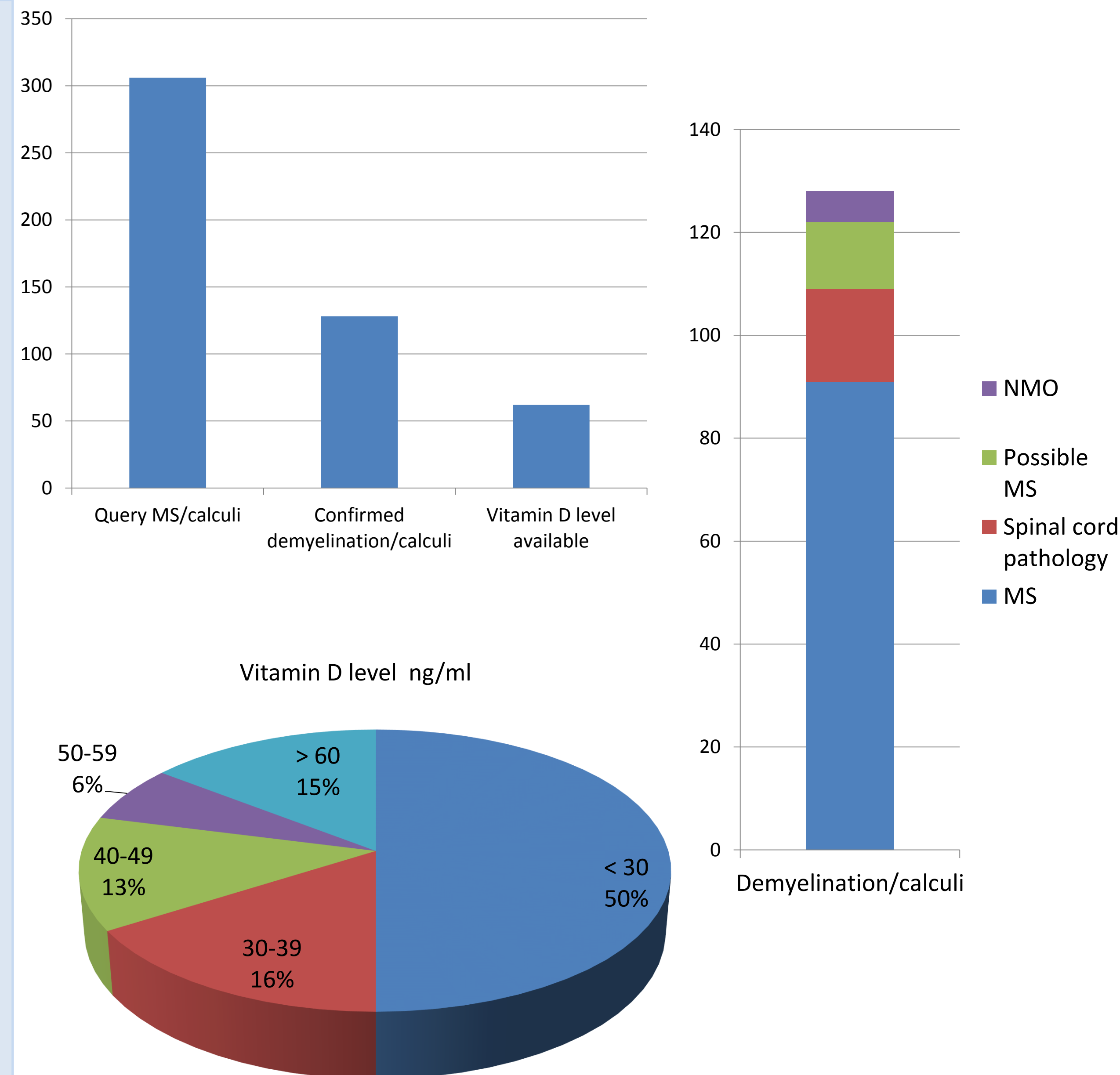
- Vitamin D deficiency has been shown as a risk factor for MS presentation, disease activity, and progression
- Vitamin D supplementation is highly recommended
- Standardized serum levels have not been established
- Vitamin D toxicity is uncommon and side effects are not well known
- Renal calculi has been implicated as a possible side effect of vitamin D toxicity
- Overall incidence of renal calculi in the US is increasing
- Rise is thought to be related to increase in metabolic syndrome
- Other risks include male gender, increased age, high sodium diet, neurogenic bladder, and urinary tract infections

## Objectives

- Retrospective study to find those with MS and renal calculi
- Evaluate if there is any relationship to vitamin D serum levels and renal calculi in this subgroup
- Evaluate for other risk factors of renal calculi in MS

## Methods

- Retrospective chart review
- Patients identified using the Healthcare Enterprise Repository for Ontological Narration (HERON)<sup>1</sup>
- Patients identified by a primary diagnosis of MS and secondary diagnosis of renal calculi



## Results

- HERON search resulted in 6210 with MS, and 306 patients with primary and secondary diagnosis
- 178 excluded for not having either demyelinating disease or renal/bladder calculi
- 128 had demyelinating disease with 91 having MS
- Other demyelinating diseases included transverse myelitis or other spinal cord disease, possible MS, and neuromyelitis optica
- Age range 26-81, average 56.6 years old
- Race was predominantly Caucasian 89%
- Gender predominantly female 71.9%
- 51 (40%) had neurogenic bladder
- 89 (69.5%) were documented to be on vitamin D supplementation
- 62 (48.4%) had a vitamin D level
- Levels ranged from 10.9-116ng/ml average 36

## Conclusion

- Small cohort showed no significant relationship of vitamin D levels/toxicity with renal/bladder calculi
- Only 2% of those with MS in the HERON system had urinary calculi, this should be further investigated
- This could be due to decreased reporting and screening for urinary calculi
- We suggest close vitamin D serum monitoring in the MS population, particularly those with urinary calculi to screen for potential toxicity

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<sup>1</sup> Waitman LR, Warren JJ, Manos EL, Connolly DW. Expressing Observations from Electronic Medical Record Flowsheets in an i2b2 based Clinical Data Repository to Support Research and Quality Improvement. AMIA Annu Symp Proc. 2011;2011:1454-63. Epub 2011 Oct 22.