An Audit of Vitamin D Testing and Supplementation in a Child and Adolescent Inpatient Unit

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Background:

- Vitamin D deficiency and insufficiency is common in Irish adolescents, reported prevalence 36-55%[1].
- Studies show an association between low Vitamin D levels and psychiatric disorders [2]
- Children requiring admission to a psychiatric inpatient unit may be at increased risk of Vitamin D deficiency secondary to reduced oral intake and reduced time outdoors.
- The current HSE guidelines of the National Clinical Programme for Pathology, recommend screening only for specified high risk groups, not including children admitted with psychiatric disorders[3].
- Treatment of Vitamin D deficiency with supplementation is recommended at serum levels <50 nmol/L[4].

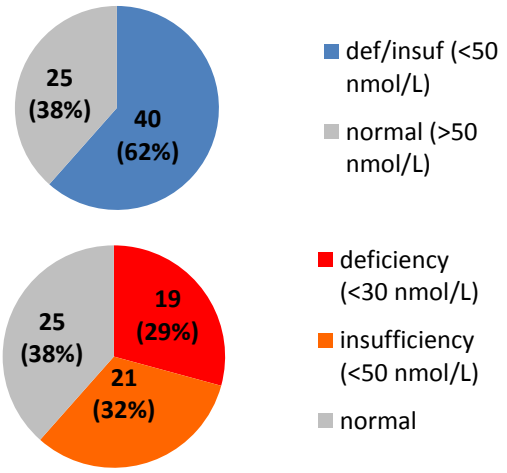
Objectives: To audit Vitamin D screening in a child and adolescent inpatient unit relative to HSE guidelines and to audit supplementation.

Methods: All admissions from January to December 2019 were audited for testing of Vitamin D levels, serum level of Vitamin D, and supplementation with Vitamin D when deficiency identified. Diagnosis on admission and race were also documented.

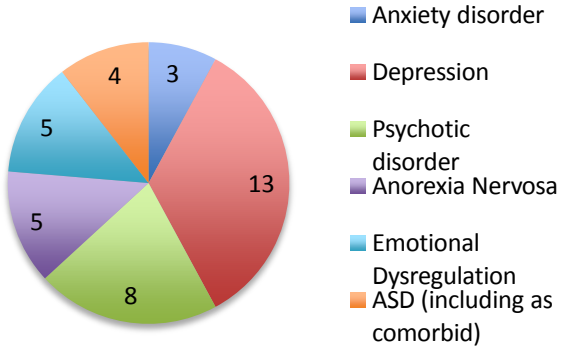
Results:

- Vitamin D testing completed in 65 of 125 admissions (52%). No patients tested satisfied the criteria for screening, as per HSE lab guidelines.
- 19 (29%) were deficient (< 30 nmol/L), 21 (32%) had insufficient levels (30-50 nmol/L) and 25 (38%) were within normal range (>50 nmol/L). All tested patients of non-white race had low Vitamin D levels (<50 nmol/L). Of those with low Vitamin D levels, 20 (50%) were either treated with adequate supplementation or referred for GP follow up. Average Vitamin D levels were lower in October to March (44.1 nmol/L) than in April to September (49.2 nmol/L).

Vitamin D Levels



Low Vitamin D by Diagnosis



Conclusions:

- Testing for Vitamin D occurred in cases not recommended for screening by HSE guidelines.
- A high rate of Vitamin D deficiency/insufficiency was identified - research may be required to consider guidelines for Vitamin D testing in psychiatric inpatient units.
- Cost of potentially unnecessary screening must be weighed against the benefits of identifying and treating Vitamin D deficiency.
- Low Vitamin D levels were supplemented in only 50% of cases. An educational intervention around treatment of Vitamin D deficiency and discussion regarding internal guidelines on vitamin D testing is planned, with re-audit to follow.

References:
1. Vitamin D Status in Irish Children and Adolescents Clin Paediatr (Phila) 2014; Dec 53(14) 1345-51
2. Depression and Vitamin D deficiency, Causality, Assessment and Clinical Practice Implications, Cuomo A. et al, Neuropsychiatry London, (2017) 7 (5) 606-614
3. HSE National Laboratory Handbook, Lab Testing for Vitamin D Deficiency,2017
4. NICE Guidelines 2017 Vitamin D: Supplement use in specific population groups

*Permission for this audit was granted by clinical director, Prof. Brendan Doody