Prevalence Of Vitamin D Deficiency In Patients With Tuberculosis In An East London Population In The Uk

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Introduction:
Tuberculosis (TB) is a serious public health problem in the UK, concentrated in high risk groups and particularly among urban populations. It is well-established that there is a link between vitamin D deficiency and TB, although the in vivo association between vitamin D status and TB is still contentious. In addition, there is a growing amount of evidence that associates low levels of serum vitamin D in pulmonary disease such as asthma and chronic obstructive pulmonary disease (COPD). This study aimed to investigate the numbers of patients diagnosed with TB, who had vitamin D measured and the prevalence of vitamin D deficiency in this group.
Methods:
A retrospective observational study was carried out in all patients diagnosed with TB in the London boroughs of Barking, Havering and Redbridge during a twelve month period from 1st September 2010 to 31st August 2011. Epidemiological data was found using the London TB Register and serum vitamin D (D2 and D3) levels, where measured, were recorded.
Results:
There were 211 notifications for TB. 75 (35%) had vitamin D levels measured. 100% of patients had undetectable vitamin D2 levels (<5nmol/l). 60 (75%) had deficient vitamin D3 levels, of which 12 were undetectable (16%) and a further 15 (25%) had insufficient D3 levels. No patient had normal vitamin D3 levels. The sum of D2 and D3 levels was normal in 1 (1%) patient, insufficient in 15 (20%) and deficient in 59 (79%), of which 10 (13%) had undetectable vitamin D levels. 54 (73%) were from the Indian sub-continent, 14 (19%) were Black-African, 5 (7%) were Caucasian and 1(1%) Chinese.
Conclusion:
In the study population, almost 100% of TB patients who had vitamin D levels checked were either deficient or insufficient. The high prevalence of vitamin D deficiency in this population of TB patients has not been demonstrated in other studies either in the UK, US or in the developing world. The association of vitamin D deficiency with the development of active TB is an obvious confounding factor, but we hypothesize that this may be a unique finding in our ethnically-diverse population and thus may have implications for nutritional supplementation offered to patients with other chronic respiratory disease with possible links to vitamin D deficiency and particularly those who require regular steroid treatment.

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