Metformin-associated vitamin B12 Deficiency in patients with diabetes: A 10-year-retrospective study from the UAE

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Background:

Long term metformin usage has been noted to be associated with vitamin B12 deficiency. Diabetes is highly prevalent in the UAE and metformin treatment is widely used. However, there are no published data on vitamin B12 deficiency and its association with metformin treatment in this population.

Aim:

To investigate the prevalence of vitamin B12 deficiency and its association with metformin usage in the study population.

Methods:

Relevant data on adult patients (16 years and above; n=214,871) followed-up at 3 ICLDC Centres in UAE (n=214,871) were retrieved. Patients with vitamin B12 deficiency (<150 pg/dl) and not on any vitamin B12 supplement at the time of initial test during the last 10 years were included in the analysis.

Results:

10368 patients with diabetes (95% type 2, 65% female), had vitamin B12 level checked. Of these, 898 (8.6%) were vitamin B12 deficient. Metformin usage for 6 months or more was associated with more pronounced B12 deficiency (Mean 129.7±0.5) when compared to patients who used metformin for less than 6 months (Mean 134.7±1.5; $p<0.001$). Furthermore, low levels of vitamin B12 (≤100 pmol/L) was noted to be associated more with neuropathies ($P<0.01$).

Conclusion:

Our results confirm the association of long-term metformin usage with vitamin B12 deficiency in the Emirati population with diabetes. Further prospective studies to confirm these results are planned.