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**Title:** Vitamin D deficiency in asthma patients with allergic bronchopulmonary aspergillosis (ABPA)

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**Body:** Background: Vitamin D deficiency is being increasingly recognized in chronic lung disease. Recent studies suggest that ABPA correlated with vitamin D deficiency among Cystic Fibrosis (CF) patients, and that heightened Th2 reactivity in ABPA correlated with lower mean serum vitamin D levels. However, this correlation remains unknown in asthma patients with ABPA. Methods: 144 asthma patients (with ABPA, n=80), (without ABPA, n=64) who attended our hospital between January 2011 and May 2012 were prospectively evaluated for 25-hydroxyvitamin D (25-OHD3), lung function and IgE levels. Patients were retrospectively reviewed for clinical characteristics and prognosis compared with patients with normal VitD levels. Results: VitD deficiency (<25 nmol/L) occurred in 61 (42.4%) of 144 asthma patients of whom 18 (12.5%) were severely deficient (< 25 nmol/L). Patients with ABPA had higher mean serum VitD levels compared with non-ABPA controls, though the difference was not statistically significant (68.8±38.3 nmol/L vs 57.6±35.7nmol/L (p=0.59). Moreover, the FEV1 was significantly lower in the deficient group compared with the group with normal levels (P=0.030). Further, patients with low VitD levels had a poorer prognosis compared to those with normal levels. CONCLUSION: Our data suggests that asthmatic ABPA patients may have higher vitamin D status than non-ABPA patients and that there may be an association between lung function and Vitamin D status. However, the causal effect relationship needs to be established.