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## **Vitamin D Deficiency Cardiomyopathy: A National Experience**

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### Introduction

Dilated cardiomyopathy (DCM) is the leading cause of heart transplantation in children over the age of five years. Idiopathic DCM remains the most common aetiology but Vitamin D deficiency DCM is reported in the literature.

### Methods

A retrospective review of consecutive cases of vitamin D deficiency DCM presenting to a national congenital cardiac centre between January 1st 2000 and August 31st 2017. Patient demographics; maternal vitamin D status; echocardiographic parameters; x-rays; serum biochemistry and length of hospital stay were reviewed.

### Results

Six patients were identified during the study period (three male), three of whom were Caucasian. Median age at presentation was 210 days (range 2, 302.) All six patients had high serum parathyroid hormone levels (median 45pmol/l, range 27, 120), a sensitive marker of total body calcium deprivation secondary to vitamin D deficiency. All patients demonstrated clinical and echocardiographic improvement following high dose vitamin D treatment. One patient failed to comply with medical management and died five months after initial diagnosis.

### Conclusion

Vitamin D supplementation is recommended for pregnant women and children under the age of five years. Although vitamin D deficiency DCM is relatively rare, it is wholly preventable. In Northern Europe children remain at risk of vitamin D deficiency secondary to inadequate exposure to sunlight, particularly during the winter months. In addition, social deprivation and maternal vitamin D deficiency are important risk factors for vitamin D deficiency DCM in the paediatric population. Prophylactic vitamin D supplementation may obviate future morbidity and mortality and improve clinical cost effectiveness.