Introduction

In medical research there is growing interest in the question of which group of people require supplementary Vitamin D. Vitamin D is a hormone, the main function of which is bone mineralisation. Deficiency can lead to bone deformities in children and increase the risk of fractures in adults. In severe deficiency, osteomalacia occurs, manifest as muscle weakness and bone pain. Vitamin D deficiency is preventable if actively looked for and adequately supplemented. At-risk groups include darker skin types, house-bound or wheelchair-bound patients, Asian females and people living in climates of reduced sunlight. It was hypothesized that patients with Glycogen Storage Disease Type II (GSDII) were more likely to be vitamin D deficient than the normal UK population. This poster considers how a research project may be adapted to include service improvement considerations, using the Plan-Do-Study-Act model.

Vitamin D Status and Bone Health

Emem Usoro (emem.usoro@doctors.org.uk)

year 5, Manchester Medical School

Introduction

In medical research there is growing interest in the question of which group of people require supplementary Vitamin D. Vitamin D is a hormone, the main function of which is bone mineralisation. Deficiency can lead to bone deformities in children and increase the risk of fractures in adults. In severe deficiency, osteomalacia occurs, manifest as muscle weakness and bone pain. Vitamin D deficiency is preventable if actively looked for and adequately supplemented. At-risk groups include darker skin types, house-bound or wheelchair-bound patients, Asian females and people living in climates of reduced sunlight. It was hypothesized that patients with Glycogen Storage Disease Type II (GSDII) were more likely to be vitamin D deficient than the normal UK population. This poster considers how a research project may be adapted to include service improvement considerations, using the Plan-Do-Study-Act model.

Affected system | Physical impact
---|---
Weakness of pelvis or legs | Running 67%  
Climbing stairs 28%  
Walking 17%  
Rising from seat 20%  
Rising from lying position 11%
Weakness of respiratory muscles | 1/52 patients

During disease progression

Muscle weakness | Gait abnormalities 87%  
Crutches 15%
Wheelchair 48%
Nocturnal ventilatory support | Intermittent daytime ventilatory support  
Ventilator dependency (onset 48.6±16.3 years)
Exercise related muscle pain | 46% (upper legs and arms)
Exhaustion | 76%

Table 1. Clinical features of GSDII

Lessons

- Seek opportunities to put a QI spin on student projects - plan this early
- You’re only as good as your team
- Nag them until the cows come home!
- Even if lasting changes are not implemented, use the experience to plan future improvement projects

References:

Bhode et al. Recommended summer sunlight exposure levels can produce sufficient (>20ng/ml) but not the proposed optimal (>32ng/ml) 25(OH)D levels at UK latitudes. JID 2010; 131:1411-1418.
LE Brooks et al. Does the level of summer sunlight exposure recommended by national policy produce sufficient vitamin D levels in the UK? J. Invest. Dermatol. 2010; 130:1411-1418.
LE Brooks et al. Recommended summer sunlight exposure can produce sufficient (>20ng/ml) but not the proposed optimal (>32ng/ml) 25(OH)D levels at UK latitudes.