Bone Health

Individuals with epilepsy on long term anti-epileptic treatment are at an increased risk of poor bone growth, falls and fractures. Aetiology can be related to AED treatment itself, poor nutrition, reduced mobility and limited sun exposure.

While the mechanisms of AED related metabolic bone disease are varied, they may be associated with alterations in calcium metabolism, reduced levels of vitamin D and bone mineral density. Anti-epileptic treatments thought to be associated with metabolic bone disease include barbiturates, phenytoin, carbamazepine, oxcarbazepine, sodium valproate and the ketogenic diet.

Longer duration of treatment and polytherapy are associated with a greater risk of bone disease.

Monitoring of calcium and vitamin D levels is recommended for patients receiving long term AED treatment, with supplementation in those that are deficient.

Additionally, other risk factors might also need to be addressed to optimise bone health such as life style measures and weight bearing strategies. Measurement of bone mineral density may be considered in patients with multiple risk factors on anti-epileptic treatment, especially the ketogenic diet.

Summary of advice for bone health in patients on AEDs:

- Adequate sunshine/vitamin D
- Mobilisation (weight bearing if possible)
- Healthy and varied diet including calcium rich products such as dairy
- Paediatricians should consider monitoring of vitamin D and calcium and supplementation if deficient

REFERENCES: