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### **Infliximab, osteoporosis and osteopenia in Crohn's disease**

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**Introduction:** Osteoporosis is common among Crohn's disease patients.

**Aims and methods:** The aim of our study was to establish which factors are associated with a greater risk of osteoporosis in Crohn's disease. 83 Crohn's disease patients were recruited. Informed consent was obtained to gather their phenotypic data in a database and perform a DEXA scan.

**Results:** Mean patient age was 39 years with mean disease duration of 9 years. Mean Z score spine: -0.4, Z score hip: -0.7, T score spine: -0.7, T score hip: -1.3. 30% of the

population had osteopenia and 6% had osteoporosis at the spine. 46% had osteopenia and 14% had osteoporosis at the hip. Factors which were associated with lower DEXA scores were young age of disease onset (ANOVA  $p=0.024$ ), patients on Infliximab ( $p=0.005$ ), long-term steroid use ( $p=0.032$ ) and low body mass index (BMI,  $p=0.004$ ). Disease location (ANOVA  $p=0.851$ ), disease behavior ( $p=0.911$ ) smoking ( $p=0.181$ ) and increasing age(>50 years) ( $p=0.128$ ) were not associated with low DEXA scores.

**Conclusions:** Low BMI, early disease onset and long-term steroid use are risk factors for osteoporosis in Crohn's disease. An important risk factor for low bone density is Infliximab. Lower Z scores in patients on Infliximab may occur as these patients have more severe inflammation, requiring aggressive treatment. Turk N et al have shown that in Crohn's patients, the proinflammatory cytokine TNF- $\alpha$  is associated with the osteoclastogenic receptor activator of NF $\kappa$ B-ligand, and inversely with bone density. A second explanation might be that low bone densities in patients on Infliximab are a side-effect of the drug. There is no data to suggest this. Studies 2-3 show Infliximab to have a beneficial effect on bone turnover markers in Crohn's patients in the short term. Randomly controlled long-term trials are needed to evaluate the impact of Infliximab on bone density.