It can be trained for site-specific reporting styles and use rules to refine identification (e.g. age>50y; bone involved; etc). At the development site, XRAIT was used to search the emergency patient presentations of people over 50 years of age and compared to referrals to FLS (usual care) during the same 3-month period. XRAIT analyzed all plain radiographs and CT scans (n = 5089) while n = 224 were referred to FLS for usual care. External validation: XRAIT was used to analyze digitally readable radiology reports in an untrained cohort from DOES (n = 327) to calculate sensitivity and specificity.Results: XRAIT identified a 5-fold higher number of potential significant fractures (349/5089) compared to manual case finding (70/224). 339/349 were confirmed fractures (97.1%). Only 29% of those eligible were started or recommended anti-resorptive therapy, including those seen by the fracture liaison service. XRAIT unadjusted for the local radiology reporting styles in DOES had a sensitivity of 69.6% and specificity of 95%. Conclusion: XRAIT identifies clinically significant fractures efficiently with minimal additional human resources. Its high specificity in an untrained cohort suggests it could be used at other sites. Automated methods of patient identification may assist fracture liaison services to identify fractures that still remain largely untreated.

Adrenal

ADRENAL - CORTISOL EXCESS AND DEFICIENCIES

The Effect of Exogenous Cushing's Syndrome on All-Cause and Cause-Specific Mortality: A Systematic Review

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Chronic oral glucocorticoid (GC) exposure from therapeutic anti-inflammatory or immunosuppressive use is the most common cause of Cushing's syndrome (CS). Previous studies of glucocorticoid therapy and mortality have produced inconsistent results and systematic reviews have only focused on endogenous CS. This is the first study that aimed to investigate all-cause and cause-specific mortality in association with exogenous CS from chronic oral GC therapy. The protocol was designed according to the principles of the PRISMA statement and registered in PROSPERO reference CRD42017067530. A literature review was performed in PubMed/MEDLINE (1966 to 31 Mar 2019), EMBASE (1974 to 31 Mar 2019), web of science (1900 to 31 Mar 2019), CINAHL (1981 to 31 Mar 2019) and reference lists within selected articles. Of 104,064 studies, 127 met the inclusion criteria, encompassing 51,380 patients. The Risk Of Bias In Non-randomized Studies of Interventions (ROBIN-I) tool was chosen and modified for evaluation of quality. The weighted percentage mortality by 5 groups of diseases including vasculitis, connective tissue diseases, inflammatory diseases, haematologic diseases and respiratory tract diseases, was 18.1, 12.7, 16.1, 28.2 and 5.7, respectively. The leading causes of death were cardiovascular disease (25.6%), malignancy (15.6 %), infection (13.4) and respiratory failure (10.8%). Although these studies showed high mortality in patients exposed to GC, estimates were not adjusted for known confounders and available data do not allow disentangling the relative contribution of CS vs. the underlying disease or non-GC immunosuppressive therapies. More extensive, high quality, prospective studies are needed to evaluate these associations and to identify modifiable risk factors.

Bone and Mineral Metabolism

BONE AND MINERAL CASE REPORTS II

A Case of Uremic Tumoral Calcinosis with Secondary Hyperparathyroidism

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Background: Uremic tumoral calcinosis is an uncommon clinical entity that can be seen in patients with end-stage renal disease, characterized by development of calcific deposits in the soft tissue. This condition can cause significant pain and impairment of mobility for patients. While it appears that elevation in calcium-phosphate product and hyperparathyroidism may each play a role in the development of these deposits, these conditions are neither necessary nor sufficient for this process to occur. As a result, the optimal treatment of this condition is not well-established.
Case: A 50-year-old man with history of ESRD since 2015 secondary to autosomal dominant polycystic kidney disease on peritoneal dialysis, HTN, and secondary hyperparathyroidism presented to the emergency room with progressive right lateral hip pain, reaching the point where the patient could no longer ambulate. Exam demonstrated a thin man whose right hip was tender to palpation with limited range of motion, as well as a palpable, deep right upper leg mass. Laboratory findings were significant for a creatinine of 14.83mg/dL (n <1.5mg/dL), calcium of 9.1 mg/dL (n 8.5-10.5mg/dL), phosphate of 7.9mg/dL (n 2.5-4.5mg/dL), intact PTH of 1129pg/mL (n 15-65pg/mL), and 25-OH Vit D of 20.4ng/mL (n>30ng/mL). X-ray of the right femur demonstrated a 9cm calcified soft tissue lesion, which was not present on imaging 7 months earlier. Subsequent CT of the pelvis showed a cystic, multilobulated calcified mass in the right gluteus, measuring 6.1 x 3.5 x 7.5cm, consistent with tumoral calcinosis. Attempts to normalize his serum phosphorous level using treatment with phosphate binders or changes to his dialysate had failed previously, and the patient declined transitioning to hemodialysis. Nuclear medicine parathyroid scan demonstrated four-gland hyperplasia, and the decision was made to perform 3.5 gland parathyroidectomy. Two days post-operatively calcium had dropped to 7.7 mg/dL, phosphate to 6.8mg/dL, and intact PTH to 29pg/mL.
Conclusions: Uremic tumoral calcinosis is a very rare but potentially debilitating consequence of end-stage renal disease that can be significantly detrimental to quality of life in patients with ESRD. Elevated calcium-phosphate product is frequently implicated in its development, and evidence exists that lowering these levels can lead to complete resolution of these lesions. However, in patients