higher than that of the other two AI subtypes (all p<0.05), although all Z-scores were still below 0. In multivariate analyses, patients were more likely to report a worse PCS score (<40) if they were women (OR: 3.3, CI 95%: 1.8–6.0), had SAI or GIAI (OR: 2.5, CI 95%: 1.4–4.3), had shorter duration of AI (<6 years) (OR: 2.0, CI 95%: 1.1–3.6), were treated with >25 mg hydrocortisone equivalent daily (OR: 2.3, CI 95%: 1.2–4.6), had more comorbidities related to GC excess (OR: 2.3, CI 95%: 1.3–4.0), reported higher financial burden due to AI (OR: 2.1, CI 95%: 1.3–3.6), and reported difficulties with AI management (OR: 2.5, CI 95%: 1.2–5.2). Women (OR: 2.1, CI 95%: 1.08–4.0), shorter duration of AI (OR: 2.4, CI 95%: 1.4–4.3), higher financial burden due to AI (OR: 2.3, CI 95%: 1.3–4.0), reporting difficulties with AI management (OR: 2.6, CI 95%: 1.4–4.9), and lack of family support during adrenal crisis (OR: 9.1, CI 95%: 2.3–33.3), were predictors of a worse MCS score (<40).
Conclusions: Patients with AI have substantially impaired QoL despite GC replacement therapy. Certain determinants of QoL are modifiable and achievable, such as avoiding GC over-replacement, offering detailed hands-on education in self-management, more comprehensive insurance coverage, and more robust domestic support. Our study calls for a multidimensional effort from patients, clinicians, and society to improve QoL in this vulnerable patient population.

Adrenal

ADRENAL – CLINICAL RESEARCH STUDIES

Real World Mortality and Specific Causes of Death in Chronic Oral Glucocorticoid Use: A Systematic Review, Meta-Analysis and Meta-Regression

Padiporn Limumpornpetch, Endocrinologist[1], Ann W. Morgan, MD, PhD[1], Ana Tiganescu, PhD[1], Victoria N. Nyaga, PhD[2], Mar Pujades Rodriguez, MD, PhD[1], Paul D. Baxter, PhD[1], Paul Michael Stewart, MD, FRCP[1].
[1]University of Leeds, Leeds, United Kingdom, [2]Scientific collaborator Cancer Center, Brussels, Belgium.

Background: Glucocorticoids (GCs) are widely used as therapeutic agents with prevalence 0.9–3.7%, but they are associated with significant side effects. Understanding of mortality ratios and causes of death from GC use is poorly appreciated and likely to help shape future stratification of clinical practice. **Aims**: To perform a meta-analysis of all-cause and specific cause -mortality amongst chronic GC users. **Methods:** The protocol was registered in PROSPERO (CRD42017067530). Searches were undertaken of PubMed, EMBASE, CINHAL, web of science and Cochrane Central from 1966 to April 2019. The primary outcomes were proportion of death and SMR in chronic GC use patients. The meta-analysis was performed with STATA version 16.1. The I2, subgroup analysis and meta-regression were used to assess heterogeneity among included studies. **Results:** A total of 109,511 articles, were screened. One hundred eighteen articles with 128 patient cohorts containing 51,374 patients reporting mortality fulfilled the eligibility criteria and were included in the meta-analysis. SMR from seven autoimmune/inflammatory disease studies was 1.84 (95%CI 1.27,2.41) with I2 70.2 6%. The proportion of overall death was 0.12 (95% CI 0.1, .014) with I2 89.3%. The proportion of death was 0.18 (95% CI 0.13,0.24) with I2 92.0% in vasculitis diseases (40 studies), 0.10 (95% CI 0.08, 0.13) with I2 86.2% in connective tissue diseases (67 studies), 0.07 (95% CI 0.03, 0.13) with I2 88.7% in inflammatory diseases (15 studies), 0.28 (95% CI 0.21–0.37) with I2 0.0% in haematologic diseases (2 studies), and 0.06 (95% CI 0.05, 0.09) with I2 0.0% in respiratory diseases (3 studies). GC prescription reports were different across studies and led to different prediction of mortality with high heterogeneity. Proportion of death amongst a GC cumulative dose of 0.3 to 3.9 gram, 4.0 to 7.3 gram and 7.4 to 36.7 gram were 0.11 (95% CI 0.06, 0.20), 0.04 (95% CI 0.02, 0.08) and 0.16 (95% CI 0.08, 0.28), respectively. The proportion of deaths predicted by average mean dose of ≥ 5mg/d, >5–7.5 mg/d, >7.5–10 mg/d and >10–30 mg/d were 0.02 (95% CI 0.01, 0.10), 0.15 (95% CI 0.15, 0.16), 0.08 (95% CI 0.03, 0.19) and 0.14 (95% CI 0.11, 0.19), respectively. The proportion of death predicted by a maintenance dose of ≥5mg/d, >5–7.5 mg/d, >7.5–10 mg/d and >10–30 mg/d were 0.08 (95% CI 0.05, 0.13), 0.12(95% CI 0.05, 0.23), 0.11(95% CI 0.06, 0.210) and 0.12(95% CI 0.05, 0.24) respectively. The causes of death (77 studies) were cardiac (25.3%), infection (13.2%), malignancy (15.6%), respiratory failure (10.6%), active underlying disease (4.4%), cerebrovascular disease (1.1%) and thromboembolism (0.9%). **Conclusion:** This is the first meta-analysis of oral GC use and mortality from real-world clinical practice publications. Multiple factors contribute to mortality, including GC dose, duration of exposure, route, preparation, together with patient and disease-specific factors.

Adrenal

ADRENAL – CLINICAL RESEARCH STUDIES

Real-World Evidence of Clinical Outcomes in Patients With Assumed Classic Congenital Adrenal Hyperplasia in the United States

Mallory Farrar, PharmD, Robert Farber, PhD, Ginny P. Sen, MPH, Charles Yonan, PharmD, Jean Lin Chan, MD
Neurocrine Biosciences, Inc., San Diego, CA, USA.

Background: Classic congenital adrenal hyperplasia (CAH) is an autosomal recessive disorder, usually due to a deficiency in the 21-hydroxylase enzyme, that results in impaired cortisol synthesis and excess androgen production. Patients with classic CAH experience both disease-related features from excess androgens and treatment-related complications from the chronic, supraphysiologic use of glucocorticoids (GCs) often required for androgen control. This study was conducted to evaluate the demographics and clinical characteristics of adult and pediatric patients in the United States (US) with assumed classic CAH based on International Classification of Diseases (ICD) codes, GC prescriptions, and medical claims. **Methods:** Analyses were based on longitudinal patient-level data from the Decision Resources Group Real World Evidence repository, which links medical claims, prescription claims, and electronic health records from >300 million US patients. Data were analyzed for patients aged ≥18 years (adult) and <18 years (pediatric) with assumed classic CAH based on ICD 9/10 codes associated with "adrenogenital disorders" and whose proportion of days covered with a GC in 2018–2019 was >75%. These