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The Cortisol Conundrum: The Diagnostic Work up for Patients With Suspected Cushing's Disease and Hypercortisolaemia in Australia. Results of a Survey and Clinical Audit

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Cushing's syndrome (CS) and the pituitary tumour causing hypercortisolaemia, known as Cushing's Disease (CD), is a rare and challenging diagnosis. It is complicated by nonspecific symptoms and a range of diagnostic tests, with an average diagnostic delay of 3 years. Our objective was to compare the intended diagnostic workup by clinicians and medical students (students) against Endocrine Society Clinical Practice Guidelines (Guidelines). Comparisons were also drawn between the Guidelines and the workup of patients with suspected CS, aiming to identify areas to improve diagnosis and reduce diagnostic delay. This study had two parts. The first was a mixed cohort cross-sectional study involving an anonymised online survey, which examined the clinical experience of respondents, intended diagnostic pathway for CD and recommendations for improvement. The survey was distributed to clinicians and students in Australia, at four tertiary hospital facilities and students at two tertiary centres. The second part was a retrospective clinical audit of the diagnostic workup for patients with suspected CS, performed by senior endocrinologists, associated with an Australian tertiary health facility. Survey responses were received from 102 individuals (52 doctors and 50 students). Most doctors were trained in endocrinology (77%). Most doctors had seen <10 CS or CD patients throughout their careers and training (79%). The most common initial screening tests for clinicians and students were 24-hour urinary free cortisol (80% and 82%, respectively) and low dose overnight dexamethasone suppression testing (67% and 50%, respectively). Plasma adrenocorticotropic hormone (ACTH) and Magnetic Resonance Imaging (MRI) were selected by most clinicians (80% and 74%, respectively) and most students (70% and 82%, respectively), as tests for localising confirmed hypercortisolism. Recommendations suggested by respondents were broadly categorised into: greater clarity of the diagnostic process, by means such as flow charts (50%); increasing awareness (44%); and non-endocrine physician training (31%). Audit inclusion criteria was met by 15 patients (53% female; 47% male; mean age 46.9 years). The mean time from endocrinology referral to diagnosis was 13.5 months. Hypercortisolism was confirmed in 11 patients; including 4 patients with CD and 1 patient with ectopic CS. ACTH was ordered prior to confirming hypercortisolism in 14 patients and 1 patient was tested prior to excluding exogenous steroid use. Our study demonstrated that the majority of clinicians and students when surveyed, would make diagnostic decisions in line with the Guidelines. Half of respondents suggested there was a lack of clarity in diagnostic algorithms available. Minor discrepancies were seen between Guideline recommendations and patients' assessments amongst the cohort audited. However, ACTH was consistently sent during screening and a patient was assessed with iatrogenic Cushing's, which are not recommended. Our findings suggest improved resources for the diagnostic workup of hypercortisolism, such as comprehensive flowcharts, may be helpful for clinicians and students.

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