The diagnostic utility of urinary C-peptide/creatinine ratio (UCPCR): Insights from a review of the local use of UCPCR in the diabetes clinic

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Background: UCPCR is a less burdensome measure of endogenous insulin secretion compared to traditional serum C-peptide, and 24-hour urinary C-peptide. It can be used to diagnose maturity onset diabetes of the young (MODY), and helps identify absolute insulin deficiency.
Methods: All UCPCR results at our NHS Trust from September 2015 to September 2017 were identified. Electronic notes were reviewed to collect the following information: clinical justification, age, time to initiating insulin, antibody serology, family history and HbA1c. Changes in diagnosis and management following UCPCR quantification were recorded.
Results: Eighty UCPCR requests were identified. The diagnosis for 40 patients was changed after consideration of UCPCR and other clinical data. Ten people with a clinical diagnosis of type 1 diabetes were reclassified as type 2, and one as HNF1A MODY. Eight people with apparent type 2 diabetes were reclassified as type 1.
There was a change in management in 32 cases. Ten individuals have restarted oral medication of which five patients are off insulin and five now on basal only; four such patients had been on insulin for over 15 years, of whom two were on insulin pump therapy. Three patients with LADA are under surveillance using serial UCPCR as well as HbA1c and glucose measurements to inform decision-making on the need for exogenous insulin therapy.
Conclusion: UCPCR is a convenient tool for classifying diabetes and guiding management in the absence of serum or 24-hour urinary C-peptide.