An optimum metabolic evaluation strategy for urinary stone patients has not been clearly defined. To evaluate the optimum strategy for metabolic stone evaluation and management to prevent recurrent urinary stones. Several databases were searched to identify studies on the metabolic evaluation and prevention of stone recurrence in urolithiasis patients. Special interest was given to the level of evidence in the existing literature. Reliable stone analysis and basic metabolic evaluation are highly recommended in all patients after stone passage (grade A). Every patient should be assigned to a low- or high-risk group for stone formation. It is highly recommended that low-risk stone formers follow general fluid and nutritional intake guidelines, as well as lifestyle-related preventative measures to reduce stone recurrences (grade A). High-risk stone formers should undergo specific metabolic evaluation with 24-h urine collection (grade A). More specifically, there is strong evidence to recommend pharmacological treatment of calcium oxalate stones in patients with specific abnormalities in urine composition (grades A and B). Treatment of calcium phosphate stones using thiazides is only highly recommended when hypercalciuria is present (grade A). In the presence of renal tubular acidosis (RTA), potassium citrate and/or thiazide are highly recommended based on the relative urinary risk factor (grade A or B).
Recommendations for therapeutic measures for the remaining stone types are based on low evidence (grade C or B following panel consensus). Diagnostic and therapeutic algorithms are presented for all stone types based on the best level of existing evidence. Metabolic stone evaluation is highly recommended to prevent stone recurrences. In this report, we looked at how patients with urolithiasis should be evaluated and treated in order to prevent new stone formation. Stone type determination and specific blood and urine analysis are needed to guide patient treatment.