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Original Article

Effect of *Piper cubeba* L. fruit on ethylene glycol and ammonium chloride induced urolithiasis in male Sprague Dawley rats

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ABSTRACT

Background: To investigate the antilithiatic effect of hydroalcoholic extract of *Kabab Chini* (*Piper cubeba* L.) fruit in male Sprague Dawley rats.

Methods: Rats were divided into six groups of six each. Group I received regular rat food and drinking water *ad libitum*. Groups II to VI were administered with ethylene glycol (EG) 0.75% (V/V) and ammonium chloride (AC) 1% (W/V) in drinking water for 7 days to induce urolithiasis. From 8th day Group I received 1 mL of 5% gum acacia. Group IV was treated with Cystone; V and VI groups with the hydro-alcoholic extract of *Piper cubeba* L. Treatment was continued for further 14 days, thereafter animals sacrificed. While Group II animals were sacrificed just after 7 days treatment with EG and AC. Group III was left untreated until 14 days and sacrificed on 22nd day. Crystalluria was analyzed on 8th and 22nd day while, urinary calcium, phosphorus, creatinine, sodium and magnesium on 22nd day. Biochemistry and histopathological studies of kidney were also carried out.

Results: Test groups showed significant reduction ($p < 0.001$) of crystals in urine. Serum creatinine and urea ($p < 0.01$) were also decreased significantly. Urine analysis showed significant increase in magnesium while calcium, sodium, chloride and phosphorus significantly decreased along with histopathological improvement in kidney tissue in treated groups.

Conclusion: From the above results it can be concluded that hydroalcoholic extract of *P. cubeba* L. fruit has significant inhibitory effect in calcium oxalate urolithiasis.

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