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***In vitro* Litholytic Effect of Aqueous Extracts of Selected Plants and Young Coconut Water on Oxalate Stone**

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Background

Stones formed in kidney or any part of the urinary tract contain organic matrix and organic & inorganic crystalloids. The patients are treated by surgical intervention or other techniques. In traditional medicines plant decoctions are used to treat the patients. Extracts of *Aerva lanata*, *Musa sapientum* kuntze inner stem, *Raphanus sativus* and *Tribulus terrestris* as well as young coconut (*Cocos nucifera* L.) water are widely used in indigenous medicine to treat urinary stone patients.

Objectives

This study was conducted to evaluate the *in vitro* litholytic effects of aqueous extracts of selected plants and young coconut water on oxalate stones.

Methods

Aqueous extracts of the whole plants of *Aerva lanata* and *Tribulus terrestris*, inner stem of *Musa sapientum* kuntze and *Raphanus sativus* roots were prepared. Seventy-five milligrams of surgically removed oxalate stone (oxalate:46.03%, calcium:22.83%, urate:0.68%, inorganic phosphate:0.5%, magnesium:0.38%) were incubated (at 37°C for 24h) separately with the aqueous extracts of different plants and coconut water (15ml). Every 24h, the extracts were decanted, analyzed for calcium, magnesium, inorganic phosphorus, uric acid and oxalate repeatedly for seven days. Deionized water was used as the control.

Results

Release of magnesium, inorganic phosphorus and uric acid were minimal. Cumulative release of calcium and oxalate into *Musa sapientum* kuntze [2.414(± 0.14); 1.958(±0.12) mg] was the highest and *Raphanus sativus* [1.505(±0.28); 1.564(±0.32) mg], was the lowest. Litholytic activity on solubilizing oxalate by young *Cocos nucifera* water 1.965(±0.77) mg and *Musa sapientum* kuntze 1.958 (±0.12) mg were almost similar. Calcium and oxalate solubility into the different plant solutions were significantly higher than into deionised water (p<0.05).

Conclusion

Among the selected herbal plants highest litholytic activity was shown by *Musa sapientum* kuntze. Litholytic activity on magnesium, inorganic phosphorus and uric acid in oxalate stones could not be significantly observed due to their poor concentration.

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