RESEARCH ARTICLE

ASSESSMENT OF ANTIUROLITHIATIC PROPERTY OF PHYTIC ACID AND EXTRACTS OF *PRUNUS DULCIS*, *MUSA ACUMINATE*, *PISUM SATIVUM* BY THE INHIBITION OF FORMATION OF CALCIUM OXALATE CRYSTALS

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Abstract: The problem of kidney stone formation among the people is growing at a distressing frequency. Reason behind this is the non-favourable food habits, infections in the renal organs and low water consumption and retention by the body. Thus the best way to address the situation of kidney stone formation is through their inhibition at early or transient stage through the use of infusions of plant molecules which form part of our daily diet. The study was concentrated around the inhibition and modulation of calcium oxalate monohydrate crystalsand its visualization and characterization when they are under the influence of prepared plant infusions and solutions. The modulations were achieved by using phytic acid, extracts of *Prunus dulcis* (Almond), *Musaacuminata*(Banana) and *Pisum sativum* (Peas). The inhibition was planned via phytic acid solution of 1mg/mL concentration and infusions of plant extracts of 20%(w/v) concentration and the crystals were prepared using double displacement reaction between calcium chloride and oxalic acid. XRD and FTIR were used to characterize the formed crystals whereas visualization and nephelometry were used to study inhibition. All the infusions and solution have shown significant inhibitory effect with maximum inhibition of 51.38% shown by phytic acid and followed by 41.58%, 26.86%, 28.14% inhibitions by banana, pea and almond respectively. The study concluded that phytic acid have maximum inhibitory effect on calcium oxalate crystals among the used components and can be used to prevent the formation of urinary calculi.

Keywords: Calcium oxalate crystals, Kidney stone, Nephlometry, Phytic acid

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