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CHEMICAL COMPOSITION OF KSHARASUTRA (MEDICATED SETON) USED IN AYURVEDIC PARASURGICAL MANAGEMENT FOR FISTULA-IN-ANO

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In this study an attempt was made to evaluate the natural compounds present in the individual Ayurvedic plant ingredients used for the preparation of the medicated thread (*ksharasutra*) used in parasurgical management for fistula-in-ano. It is postulated that a number of chemicals present in the *ksharasutra* have anti inflammatory, antibacterial and antifungal activities. Main objective of this study is to identify the chemical compounds that are responsible for the clinical success of the *ksharasutra* treatment.

The standard *kshara sutra* is prepared by repeated coatings of alcohol extract of guggul (*Comiphoramukul*), apamargakshara (ash of *Achyranthusaspera*) and haridra (*Curcuma longa*) powder over a surgical barbour linen thread no.20. This thread is spread out length wise in hangers. Each thread on the hanger is then smeared with extract of *guggul* with the help of gauze piece soaked in the *guggul* gum resin. This wet hanger is transferred in *kshara sutra* cabinet. On the next day the dried threads are again smeared with *guggul*, this process is repeated for 11 days. On the 12th day the thread is again smeared with *guggul* and then in the wet condition, thread is spread over the *Apamargakshara* powder. The thread is now allowed to dry in cabinet & the same procedure is repeated for seven times in seven days continuously, dried thread is smeared again with *guggul* and in wet condition, haridra powder it to be coated over the thread & is repeated for three consecutive days. In this way, a thread has total 21 coatings of *guggul*, 7 coatings of *Apamargakshara* and 3 coatings of *Haridra* powder. After completion of 21 coatings each thread about should cut away from the hangers and sealed in glass tube.

The *kshara sutra* extracts were subjected to phytochemical analysis to detect the presence of following biomolecules using the standard qualitative procedures as described by Trease and Evans (1989). Acetone extract were tested using TLC for the presence of three curcuminoids. The TLC pre-coated silica gel (Merk-60 F254, 0.25mm thick) plate were developed using a Camag twin trough glass tank which was pre-saturated with the mobile phase for 1 hour and each plate was developed to a height of about 10cm. The composition of mobile phase was optimized by using different mobile solvents of varying polarity. After development plates were removed and dried and spots were visualized in UV light. The results revealed that *ksharasutra* contains alkaloids, flavonoids, tannins, saponins, guggulsterone (anti-inflammatory) and curcumin (antibacterial). Its anti-inflammatory and antibacterial activities are due to the presence of these active constituents.

Keywords: kshara sutra, Apamargakshara, chemical analysis