

Phytochemical Screening and Evaluation of Anesthetic Effects of *Qurs saffron* (A Herbal Medicine)

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Abstract: Qurs saffron (herbal tablets) is used so widely as an analgesic for the treatment of gout through the Asia. And it is believed to be so safe because of its herbal properties. Therefore its effects on all the body functions are the need of hour to confirm the safety of this product for human health. In the current study the qualitative phytochemical screening of the product revealed that, it have excess quantity of alkaloids, moderate amount of saponin and carbohydrates. The alkaloids present in the product may be responsible of anti- gout effect. The anesthetic effect of the product were also checked, which were found to be negative. No comparable anesthetic effect was noted to that of xylocaine. From the current study it can be concluded that the product is effective for the use as anti-gout, and safe from the anesthetic effect.

Key words: Anesthetic effect, Qurs saffron, phytochemical screening

INTRODUCTION

Nature has been a source of medicinal agents and a large number of drugs are isolated from natural sources. Medicinal plants have a great value in the field of health. From the very past the use of herbal medicine have been very important, and fulfills the primary health care needs of about 80% of the world population (WHO, 2001).

Qurs saffron (herbal tablets) is used as an analgesic for the treatment of all body pain, especially it is prescribed for the treatment of arthritis. It claimed to have the following plant extracts. I.e. Meadow saffron, Colchicum, Murdannia, Asparagus, Pellitory, China root, Mace, Dill, Peppermint, Fennel fruit, Horse radish, Kala dana, Black pepper, Long pepper and Coral.

Colchicum autumnale (meadow saffron), are well known, preparations traditionally used as medication against gout (Klitschar *et al.*, 1999). *Asparagus officinalis* is a spring vegetable, a flowering perennial (Grubben and Denton, 2004), plant species in the genus *Asparagus*, eaten raw as a component of a salad. Dill (*Anethum graveolens*) is a short-lived perennial <http://en.wikipedia.org/wiki/Herbaceous> "Herbaceous" herb. In Arabic, dill seed is called *ain jaradeh* (means cricket eye) used as a spice in cold dishes like fattosh and pickles. In Lao cuisine and parts of northern Thailand and Vietnam, dill is known in English as Laotian coriander (Davidson, 2003). Horseradish (*Armoracia rusticana*, syn. *Cochlearia armoracia*) is a perennial plant of the Brassicaceae family, Known to have diuretic properties, the roots have been used to treat various minor health problems, including urinary tract infections, bronchitis, sinus

congestion, in-growing toe nails and coughs. Compounds found in horseradish have been found to kill some bacterial strains (Barbara, 2003).

Peppermint has promising radio protective effects for cancer patients undergoing cancer treatment (Baliga and Rao, 2010). Peppermint oil has a high concentration of natural pesticides, mainly menthone (Krieger, 2001). Saffron is a spice derived from the flower of the saffron crocus (*Crocus sativus*). *Crocus* is a genus in the family Iridaceae. Saffron has many medicinal uses (Moghaddasi, 2010). A 2010 double-blind, placebo-controlled study found saffron helped mild to moderate Alzheimer's disease (Akhondzadeh *et al.*, 2010). Crocetin, an important carotenoid constituent of saffron, has shown significant potential as an anti-tumor agent in animal models and cell culture systems (Gutheil *et al.*, 2011).

As arthritis is a most common disease in the old age, and most of the people believed that, herbal medicine have a great effect in this disease, rather than allopathic medicines. Qurs saffron tablets, an herbal product widely used for the treatment of gout and other body pain. Therefore the current study was designed with a view to confirm and explore the anesthetic effects and the phytochemical constituents of the product.

MATERIALS AND METHODS

Drug material: The fresh formulated drug (*Qurs saffron*) was purchased from local market Taxila Pakistan in January 2011. The study was performed in the Pharmacology and Therapeutics Laboratory, Frontier Medical College Abbottabad. The specimen pack, marked

Table.1. Qualitative phytochemical screening of Qurs saffron

| Test | Observation | Qurs saffron quantity |
|---|---------------------------------------|-----------------------|
| Alkaloids: Extract + 10 % tannic acid solution | Turbidity/precipitation | +++ |
| Saponins: Extract vigorously shaken in a test tube for 2 min | Frothing less than 1 cm | ++ |
| Flavonoids: (Shinoda test) Ethanolic extract + magnesium filings + conc HCl | Pink or red color | - |
| Tannins: Extract + Few drops of FeCl ₃ | An immediate green precipitate formed | - |
| Carbohydrates: Extract + Molisch's reagent + conc H ₂ SO ₄ | Purple precipitate | ++ |
| Glycosides: Extract + Fehlings reagent and boil for 2 min | Brick red color | - |

+++ : excess (Present); ++ : Moderate (present); - : Absent

with a number 1821 has been deposited in Pharmacy Museum, University of Malakand Pakistan.

Preparation for tests: 10 Tablets were dissolved in sufficient quantity of water and normo-saline for the purpose of phytochemical study and local anesthetic activities. The water based extract were used for the phytochemical investigation while the isotonic extract were used for in vivo study on rabbit eye.

Experimental protocol: The basis for this investigation was the blind use of herbal medicines throughout the villages of Asia. The one which was taken under consideration is *Qurs saffron* used for bone ache. The diluted based tablets were evaluated for the presence of alkaloids, glycosides, saponins, tannins, flavonoids and carbohydrates using simple qualitative methods of (Sofowora, 1993; Evans, 1998).

In the next step, eighteen rabbits of either sex were taken and divided into three groups of six animals each. Marked the right eye of each rabbit as control eye and left as tested eye. Cut the eyelashes of all the rabbits. Size of pupil, Light reflex, corneal reflex, Color of Conjunctiva and Lacrimation were recorded before the start of experiment. Then Group 1 was instilled with one drop of isotonic solution in left eye. Group 2 was instilled with one drop of normosaline based diluted tablets and Group 3 was instilled with one drop of Xylocaine in left eye of each rabbit. After five minutes the same dose were then repeated in each group of animals. And again measure the following parameters, i.e., Size of pupil, Light reflex, corneal reflex, Color of Conjunctiva, Lacrimation etc. Cumulative results of each group were calculated by using formula;

$$\text{Cumulative (size of pupil)} = \frac{\text{Sum of all sizes}}{\text{total number}}$$

RESULTS AND DISCUSSION

The qualitative chemical screening of *Qurs saffron* revealed the presence of excess amount of alkaloids and moderate amount of saponins and carbohydrates, while the tannins, flavonoids and glycosides were not detected as shown in Table 1 and as it had been reported that, flavonoids have a potential benefit to human health (Jouad *et al.*, 2001), which were not found in the current study.

A moderate quantity of carbohydrates and Saponins were also detected. Saponin containing plants are used as folk medicines, especially in Asia, and are intensively used in food, veterinary and medical industries (Hostettmann and Marston, 1995). Plant extracts containing a high percentage of saponins are commonly used in Africa to treat water supplies and wells contaminated with disease vectors; after treatment, the water is safe for human drinking (Hall and Walker, 1991). The data previously reported about the safe use of saponin plant extracts for mammals (Hostettmann and Marston, 1995), together with their larvicidal effects (Pelah *et al.*, 2000; Zarroug *et al.*, 1990). Alkaloids were detected as large amount which may be responsible for the anti-arthritis effect and effective in the treatment of gout.

Further more the effect of this herbal drug as an anesthetic were also been studied. All the parameters were found normal in both the cases i.e. in the case of normosaline and in the case of tested drug. There were no increase or decrease in the size of pupil was noted in either case. The lacrimation was also noted normal as before the start and with the control eye. The light reflex and corneal reflex were noted positive in the case of drug and isotonic solution, while no corneal reflex were found in any of the rabbit eye have applied the xylocaine. From this it can be concluded that, in the formulation of this drug no anesthetic had been used. And its anti-inflammatory effect may be because of the alkaloid present in it in trace amount.

Haden, in 1820, published a monograph on the use of colchicum as a general remedy in the treatment of acute and chronic inflammatory diseases (Haden, 1820). His father has begun the use of colchicum in gout after want's report he extended the use of the remedy from gout to rheumatism.

Armstrong (1837), considered colchicum a medicine of considerable benefit in inflammatory fever, He recommended it especially in acute or sub-acute rheumatism, and in internal serous inflammation, particularly of the arachnoids or of the pleura for the treatment of dropsy.

Maclagan reviewed the published experience with colchicum and described his own clinical studies (Maclagan, 1852). He found colchicum useful as a diuretic in dropsy following scarlet fever, especially when the urine was suppressed and signs of coma were present. He recommended colchicum as an anti-inflammatory drug in acute gout, in acute articular rheumatism, and in

urticaria. From these it can be concluded that the alkaloids cholchicine may be present in excess in the drug which have more potent anti-inflammatory activities responsible for anti-gout effects.

CONCLUSION

The current study reveals the presence of excess quantity of alkaloids, which may be Cholchicine, have a potent anti-inflammatory activities, responsible for the anti-gout effects. Also the anesthetic effect was studied which was found to be negative. From this it can be concluded that, the product is effective as anti-gout drug and safe from the anesthetic effect.

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