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Study of analgesic effect of *Tragopogon graminifolius* hydroethanolic extract in male mice

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ABSTRACT

Pain is a sensory phenomenon that in many cases it is a sign to identify the disease and mostly has a protective effect. Use of drugs and medicinal plants of the common methods of pain control. Several side effects of chemical drugs such as morphine housing, the more likely people are to use herbal treatment. The aim of this study was to evaluate the analgesic effects of hydroalcoholic extract of Tragopogon graminifolius (HET) in male mice. In this study, 72 male mice were divided in two sections with 6 groups(n=6) including the control group, the morphine groups(1mg/kg), the groups treated with HET at doses of 100, 200 and 400mg/kg, and group treated with naloxone (0.2ml/kg) with dose 200mg/kg of extract were used. For pain assessing in mice the writhing and tail flick tests were used. The data for each test were compared with One-way ANOVA and Tokay post test. Our results indicate that doses of 200 and 400mg/kg HET significantly increased pain threshold compared with the control group in writhing and tail flick tests. Also dose 400mg/kg have been showed mostly analgesic effect in both tests compare with morphine group.In this study, analgesic effect of the HET was observed in the tail flick and writhing tests and this analgesic effect of extract probably related to activation of opioid system.

Keywords: *Tragopogon graminifolius*, Pain, Tail flick test, Writhing test, Mice

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INTRODUCTION

Pain is usually caused by tissue damage is developed as an alarm to notify existing tissue damage to the causes and prevention of these reactions were demonstrated Injuries(1) . Pain medicine is taken as an indication of the characteristics of one of the most important factors in the diagnosis and treatment of pain The medications used to relieve pain and reduce inflammation, such as opioids or narcotics pick or corticosteroids such as hydrocortisone and Salysylat¬Ha. All these drugs have side effects.Tragopogon graminifolius DC (TG) Known as “sheng” from Compositae (Asteraceae) family is widely consumed as a green vegetable in the west of Iran(2). In Iranian traditional medicine, TG is used for poison elimination and as astringent and bleeding inhibitor, wound healer, aseptic property, and liver and stomach protector. It is also used for healing digestive bleeding and pulmonary and digestive ulcer. This herb was introduced as one of the most beneficial plants for digestive ulcer in traditional medicine (3). In different nations, Tragopogon genus is used as anticough, astringent, skin repairing (4) and is used in the treatment of gastric disorders traditionally (5).Since the beginning of civilization, humans have used plants as the medicine. Neanderthal humans might also believe that the plants had the healing powers. The history of medicine in ou country dates back to the Aryan period and Avesta, 6500 BC, was the first book Introduced the medicinal plants. Medicinal plants are the herbs with interesting and outstanding history.in addition to the ancient history, these plants are so noteworthy in the history of religions and nations,so that they have been taken into account in all important(6).

The aim of this study was to evaluate the analgesic effects of hydroalcoholic extract of *Tragopogon graminifolius* (HET) in male mice

MATERIALS AND METHODS

In this study, male male with 25-30gr weight were used. Animals were kept under standard laboratory conditions (23 ± 2°C, 12 light and 12 dark cycles, and standard humidity) and had free access to water and food. The ethic committees for animal study accepted the protocol of the present study. All experiments were performed in the morning.

Experiment Design
72 male mice were divided into 6 groups (n = 6) including:
Group 1 (control):
Group2: received the morphine groups(1mg/kg)
Group 3 (extract): received HeTG extract (100, mg/kg)
Group 4 (extract): received HeTG extract (200 mg/kg)
Group 5 (extract): received HeTG extract (400 mg/kg)
Group6: received naloxone (200mg/kg)
For pain assessing in mice the writhing and tail flick tests were used.

Macroscopic Survey
Animals were anesthetized by chloroform one hour after ethanol administration and were dissected. Their stomach was isolated and cut along greater curvature. The stomach was cleaned and speared on a flat surface (7).

Data Analysis
Data expressed as mean ± SD and were analyzed by one way ANOVA and Tukey test. $P < 0.05$ was considered significant.

RESULTS

Our results indicate that doses of 200 and 400mg/kg HET significantly increased pain threshold compared with the control group in writhing and tail flick tests. Also dose 400mg/kg have been showed mostly analgesic effect in both tests compare with morphine group.

The results in the table and graph above, the survey Tail flick test and control groups received the extract of *Tragopogon graminifolius* 100mg / kg, there was no significant difference between before and after the experiment. P>0.05

In contrast, in the group receiving extract of *Tragopogon graminifolius* 200mg / kg, the Tail flick test after test and before the trial, given that p<0.05, There was a increase significant with 95%

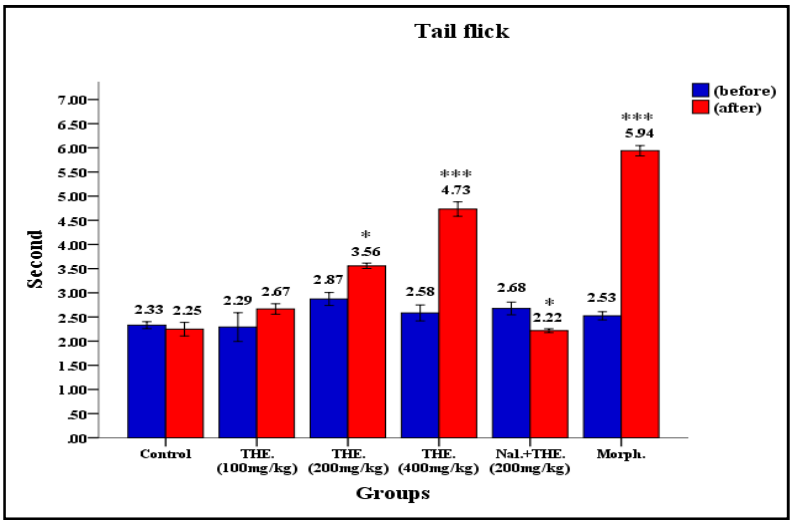

Fig1:the Tail flick test after test and before the trial

In contrast, in the group receiving extract of *Tragopogon graminifolius* 400mg / kg, the Tail flick test after test and before the trial, given that p<0.05 There was a increase significant, with 95%

Tail flick test plasticizers compare the groups receiving saline (control), extract of *Tragopogon graminifolius* 100mg / kg, 200mg / kg, 400mg / kg, naloxone + extract of *Tragopogon graminifolius* 200 mg / kgand morphine before and after testing in rats, male mice. * Indicates significant difference in pre and post testing. (*: P <0.05

DISCUSSION

A number of natural compounds extracted from plants used in traditional medicine, they are used in many countries. The use of herbs as ingredients of natural origin, with less side effects, rather than chemical treatments seem more desirable comes(8,9). Medicinal plants used in traditional medicine for the treatment of pain and inflammation is common The pain can not be directly assessed in animals is well-documented and can only be estimated by testing their response(10,11).

In this research the Rytynk and tail flick test, was used to evaluate the analgesic effect of hydroalcoholic extract of Sheng. Both referred to the most popular models to study the mechanisms of pain and analgesia are And in recent decades in order to assess the analgesic effect in mice have been used(12,13).

One of the most important tests to screen for potential analgesic compounds used in diluted acetic acid test ratings are used. Chemical stimulation is a test ratings that are widely used to assess peripheral analgesic activity. If the plant extract Sheng prevent cramping caused by acetic acid may therefore be conjectured that the relief mechanisms environment is protected(14).

In the present study, doses 200 mg / kg and 400mg/kg Sheng extract the significant decrease in the number of test ratings ratings (abdominal contractions) compared with the control group. This could be due to a peripheral analgesic effect of the extract suggested Sheng(15).

CONCLUSION

In this study, analgesic effect of the HET was observed in the tail flick and writhing tests and this analgesic effect of extract probably related to activation of opioid system.

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