



Investigation on Embryotropic Effect of Antihelminthic Plants

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Abstract

In this study the embryotropic effect of Wormwood (*Artemisia absinthium L.*) - Rue (*Peganum harmala L.*) mixture, a mixture with strong antihelminthic affect, on pregnant rats was investigated. The study involved a total of 60 female rats; 30 in treatment group and 30 in control group. An equal combination of wormwood and rue was boiled to obtain the extract and this extract was orally given to the treatment group at the stage of implantation (Group I, n = 10), organogenesis (Group II, n = 10) and fetogenesis (Group III, n = 10) at the dose of 30g/kg body weight, daily for 2 days. Pregnancy and fetal development were monitored and differences determined were compared to the control group where similar grouping was made. Animals were euthanized at the last stage of gestation (21st day) and fetuses of the two groups were compared. Implantation, locality of re-absorption, number of live and death embryos, size and weight of embryos and placenta in treatment group were not different when compared to control group ($P \geq 0.05$). Additionally no path-anatomical changes in internal organs of the fetuses were noted. This investigation concluded that the worm-wood-rue mixture had no embryotropic effect in rats..

Keywords: Embryotrop; Wormwood; Rue; Toxicology

Introduction

Intestinal tract of animals often chemicals are used against worms. However, this kind of materials antelmintic proven undesirable effects in living organisms and the remains are used to cause problems is demonstrated by numerous studies. And pastures are offered as alternatives to chemicals found naturally in some plants for use as antelmintic, can eliminate the drawbacks mentioned. Antelmintic for this adverse effect of the plant as well as being given the maximum amount of time, frequency, and the investigation of such information is important for him to apply to animals [1]. Wormwood (*Artemisia absinthium L.*) [2] and harmful plant (*Peganum harmala L.*) [3] separate or combined use in sheep high antelmintic effect known, but the pregnant animal embryotropic effect whether the unknown, this research base has established.

Antelmintic activity better known as "pain Pelin" or "wormwood" is called the plant, can be used in the treatment of cestodes have been revealed [4]. The perennial herb mugwort Asteraceae

family, çalımsı, aromatic odor, and 1 m perpendicular to the body of flowering plants is rising up. Green parts of the ester oils, carotene and vitamin C include. Özellikler esters in the volatile oil (α and β tujon) antimikrobiel [5] and antelmintic [6] effects are reported to be responsible. Wormwood of the green portion boiling derived from the liquid each sheep to the 100 ml is used, gastro-intestinal worms versus 72.3%, dry matter as a given the 65.6% rate of effectiveness is noted [2]. Besides, the veterinary medicine in the sheep-tail shape in the wound produced in the fly larvae removal order, a sharp odor that the plant's green part of the affected area to the crushed, deported, antiparasitic the effects have been reported [7].

Rural areas are widely available and an annual plant that harmful (*Peganum harmala L.*) is a deep-going long roots and branches separated bodies, each other, aligned leaves a plant [4]. All kısımları plant alkaloids, Harm, harmalin, and peganin includes harmalol. In practice, this herb tea prepared from the roots, shows a stimulating effect on the nervous system [7]. Sheep in the green part of the plant was given 45g amount strongiluslara 63.1%, to 150g per

day to three days hemonchuslara were 85.7%, 84.3% and tricho-sefaluslara strongiluslara effects were considered to be 47.6% [3].

Helminth infestations in sheep is a problem in high dimensions. Antelmintic effective against these plants have been known to use very old [8]. In a study wormwood-harmal mixture in sheep cardiac physiology, body temperature, gastrointestinal and respiratory functions, negative effects do not show [9], a mixture of the mice for 30 days was given, even in organisms experience does not make the toxic effect it does have been reported [10].

Deworming of animals in Nakhchivan usually coincides with the winter period. Accordingly, the effect of high helmintosid toxicological properties of plants has an important place to learn. Different physiological status of these plants and animals to be given during pregnancy in order to better understand their toxicological aspects have to be investigated.

In this study, pregnant rats of a mixture of wormwood-harmal embriyotrop and thus determine whether the

effect of this mixture to use as a preparation in pregnant sheep antelmintik about the reliability of the information is intended.

Materials and Methods

Study, 60 rats were used for one elderly female. To detect pregnancy in rats with male rats placed in the same cage fluid from the vagina of rats were received and examined microscopically. Lam spermatozoid appear on the first day of pregnancy as an accepted. Five and 6 Nowadays with the increase in vaginal discharge and received the presence of leukocytes in the fluid, a finding confirming the pregnancy was evaluated as [11].

Animals with 20 rats were divided into three groups, each group for 10 trials and 10 control animals were kept. I. Group, the implantation stage of pregnancy (pregnancy 3-4. Day) rats, II. Groups, organogenesis stage of pregnancy (11-12 of pregnancy. Day) rats, III. Group fötogenezis stage of pregnancy (16-17 of pregnancy. Day) rats were women.

Equal amount of the wormwood plant and harmal were divided into smaller parts and taking 10 times the addition of water in a sealed container in boiling water bath for 30 minutes were kept. After the resulting mixture then filtered to be used in trial

preparations were obtained [12]. Animals in each group of experiments, Maherremov prepared mixture [10] reported by five times the amount of treatment dose (30g/kg), in the days to two days straight was to drink. If the control groups of animals were fed equal amounts of water.

To monitor the progress of pregnancy 90-10. Microscopic examination of vaginal discharge in days of experimental animals were performed. Lam on the presence of erythrocytes by animal weight gain observed in the normal course of pregnancy has been interpreted as.

Adopted at the end of pregnancy 21 After the rats were euthanized on day uterusları by laparotomy was received and investigated. Corpus luteumu pregnancy, live and dead embryos and implantation sites were identified. With these measurements, pre-implantation, implantation, and deaths were postimplantasyon periods. After calculating the weight and dimensions of the embryoplacental relationships fötus evaluated. In each group test and control purposes is used in animals from embryos, half of the internal organs to determine changes to Vilson method based Buena solution in the [13,14], the other half of the bone to review Dauson according to the method of 96% alcohol were fixed [15]. Patho-anatomical changes in the embryo, with random cross-sections forming the internal organs with the naked eye under a magnifying glass, the material in the bones by means of transparent were then measured in length.

The findings of the Fisher-Student method was used for statistical evaluation [16].

Results

In this study, a mixture of wormwood-harmal belonging to the groups with the control group of rats taken from embryos made in accordance with sagittal-frontal sections, loop under the naked eye were analyzed. Embryos of the skull, brain, hard palate, eyes, cerebellum, lung, heart, lung, liver, digestive tract and reproductive organs in all sections of blood vessels were examined patho-anatomical changes were reviewed and each group of data from the control groups were compared.

Implantation stages of pregnancy (Group I) 30g/kg mixture of pregnancy in the rat corpus luteum of the average number of 9.91,

implantation, resorption, the number of live embryos, respectively, 9.79, 0.11 and 9.73 units, respectively. Embryonal mortality rate in the experiment group, compared to the control group without creating a difference were found to be 1.82%. Taking into account the weight of the embryo and placenta fötus-placental ratio calculated was within normal limits (25.1%). All parameters were examined in the control group values were within close limits.

Organogenesis stage of pregnancy was prepared from a mixture of 30g/kg dose group fed the animals (Group II), the average numerical value of 9.79 the place of implantation, resorption in 0.11 units, respectively. Preparations with the effect of embryonic death, which was found to be 1.61% in the control group, although this figure does not pose significant difference was observed.

Fötogenezis stages of pregnancy (Group III) was prepared from a mixture of rat-drinking embriyotrop effect was observed in embryos. Corpus luteumu pregnancy, implantation, resorption sites, number of live embryos, preimplantation and postimplantasyon rates also were within normal limits. The data obtained from the previous group and the control animals were obtained from experiments described in the findings were determined in a difference.

Bones have been evaluated and were compared with embryos in the control group. In all three stages of pregnancy 5 times the amount of treatment dose, the rats were fed a mixture of normal dimensions of the bones of embryos and that the bones of the animals in the control group was not created by a difference ($P \geq 0.05$). III embryos in the scapula'nın throughout the experiment and control groups, embryos, respectively 2:53 mm and 2:58 mm, humerus length of 2:57 and 2.63 mm, ulna 2.69 and 2.73 mm, radius at 2:11 and 2:21 mm, femur 1.92 and 1.98 mm, tibia 2:18 and 2:23 mm, 2:07 and 2:10 fibula was measured in mm.

Drink the mixture, the weight of the embryos in the experiment group and control group according to the size on it does not create a positive or negative effects were identified. I group of female embryos in test animals, 51.41% of male embryos was found to be 48.59% in the control animals and 52.31% respectively and this ratio was found to be 47.69%. Had no effect on the gender mix.

Discussion

The results of the studies presented, antelmentic effective therapeutic doses of a mixture of wormwood-harmal was five-fold

increase in the amount of implantation of pregnancy in rats, and teratogenic effects embriyotrop stages of organogenesis and does not constitute fötogenezis has revealed. Embryotoxic effect of the demonstrators who embryo preimplantation and postimplantasyon stage of death and teratogenic effects of the demonstrators, the embryos in organ differentiation and bone tissue shape changes taking into account the assessments made in the light from the study data obtained from normal limits in the determination, wormwood-harmal mixture of pregnancy at all stages embriyotrop and teratogenic effects are not shown.

Antelmentic embriyotrop and teratogenic effects of plants used for various research revealed was done. Sheep helmintozlarında high antelmentic acting hemlock plant treatment dose and treatment dose of 3.5 times pregnant rats given embryotoxic and teratogenic effects, the same doses of sheep and chickens by giving the general clinical picture, blood and urine of the physico-chemical characteristics, pathology, internal organs in the patho-anatomical changes to detect efforts have been made [17-20]. Wormwood-harmal mixture treatment dose, treatment doses of 3 and 5 times increased the amount of the animal toxicity did not [9], mice of the 30 day period given the cumulative experience and disorders of the shape is not observed [10]. Of these plants in the organism accumulation without creating breakthrough occurred, and is used in animals generally disorders not seen the other as a parameter; pregnancy and its impact on the detection requirements suggest, and that this study, this stage also can be used safely is brought up.

In general, the clover, morning and afternoon, especially in sheep grazing on common pastures-often the same small size uterus causes swelling to occur, it creates a negative impact on the ability to fertilize [21]. Wormwood-harmal antelmentic rather because of the influence of a mixture nutrition is used as a short-term is taken into account in the organism does not show a cumulative feature, and therefore can be considered toxic and does not form embriyotrop effects.

Nematodes infested become animals in the treatment was effective reported watermelon 0.5-10g/kg dose of goats, cows and sheep eat were liver, heart, lungs and intestines function impairment and hepatic protein synthesis ability in the result of decrease has been reported [22]. Animals, wormwood-harmal mixture treatment dose of 5 rigid amounts given in internal organs and mild

pathological changes in the formation of the detected although the [10], present study used a mixture of the therapeutic dose of three times the amount of granting to the mother rats, both the offspring in such side effects occur are not observed.

Prepared showing the mint against the effects of nematodes antelmentic dimetilsulfoksid'in (DMSO), at the amount of 10 ml were diluted with 20 ml of saline was injected IV as has been reported to cause unwanted effects [23]. Onion plant is also effective against nematodes. 8-15 kg per day given to beef onion, poisoning symptoms, appetite loss, tachycardia, jaundice, conjunctivitis, hemoglobinuria, hemolytic anemia, and lökositozis occurs, red blood cell formation in the cores of clusters have been reported [24]. Moreover, plants used as animal organisms antelmentic created in order to determine the toxic effects of various investigations have been made [25-30]. In the present study, the normal treatment efficacy data for the amount of five times higher in given even embriotrop and teratogenic effects do not show this mixture, applied for mothers circulation, respiration and digestion on the activities also have a negative effect not observed.

Conclusion

As a result, offered this model study antelmentic effective wormwood-harmal mixture of high levels of rat pregnancy implantation, organogenesis and fötogenezis stages embriotrop and teratogenic effect does not pose Given this mix of pregnant animals or antelmentic treatment can be used safely concluded.

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