Comparative effect of dexamethasone, metoclopramide and combination of dexamethasone-metoclopramide administrations on postoperative nausea and vomiting prophylaxis in dog model

Marjani, M.* [1], Kazemi, A.[2], Hashempour, A.R.[3]

1 -Associated professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Karaj Branch, Islamic Azad University, Karaj , Iran. (mzmarjani@gmail.com)*

2-Department of nursing , College of Nursing and Midwifery, Varamin - Pishva Branch, Islamic Azad University , Varamin , Iran.

3- Department of surgery , Faculty of Veterinary Medicine, Karaj Branch, Islamic Azad University, Karaj, Iran.

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Xylazine is preanesthetic drug that have nausea and vomiting effects. This study was done in order to assessment of the effects of dexamethasone, metoclopramide and the combination of dexamethasone - metoclopramide administrations in prophylaxis of nausea and vomiting after xylazine administration in dogs.

15 mixed breed dogs with average weight 18.9±5 Kg were randomly selected in 3 groups including intravenous (I.V) dexamethasone $1^{mg}/_{kg}$, I.V metoclopramide 0.5 $^{mg}/_{kg}$ and combination of dexamethasone - metoclopramide (0.5 -1 $^{mg}/_{kg}$). For induction of anesthesia in all groups, initially I.V diazepam (0.2 $^{mg}/_{kg}$) then I.V xylazine (2 $^{mg}/_{kg}$) and I.V morphine (2 $^{mg}/_{kg}$) were administrated and dexamethasone, metoclopramide and combination of dexamethasone-metoclopramide were injected and dogs were underwent the laparotomy technique. Anesthetic and recovery times, also nausea and vomiting effects at 30 min, 2, 4, 8 and 24 h after anesthesia were recorded and results were analyzed by ANOVA and ($P < 0.05$) were considered significant.

Duration of anesthesia at dexamethasone group were 48.2±2.8 min, metoclopramide group 51.7±2.3 min and in dexamethasone-metoclopramide group 45.7±2.3 min, respectively. Significant difference was not seen at duration of anesthesia between three groups ($P> 0.05$) none was seen nausea and vomiting.

Single or co-administration of dexamethasone and metoclopramide prevents nausea and vomiting in operation and recovery period.

Key words: *Vomiting, Dexamethasone, Metoclopramide, Xylazine.*

Protective effects of black Iranian tea on cadmium- induced hepatotoxicity in rats

Mohammadi Malayeri, M.R.*[1], Hesaraki, S.[2], Jamal livani, P. [3]

1- Department of pathobiology, faculty of veterinary medicine , Garmsar branch, Islamic Azad University, Garmsa, Iran (dr.malayeri@yahoo.com, mmalayeri@iau-garmsar.ac.ir)*

2- Department of pathology, faculty of Specialised Veterinary Science, Science & research branch, Islamic Azad University, Tehran, Iran

3- Graduated student, faculty of veterinary medicine, Garmsar branch, Islamic Azad University, Garmsar, Iran

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Useful effects of black tea in treatment of many diseases have been shown . the protective effects of tea are possibly related to its antioxidant properties or its inhibition of lipid oxidation. The aim of the present study was to investigate hepatoprotective effects of black Iranian tea on cadmium(cd)-induced hepatotoxicity .For this purpose 30 male wistar rats were randomly divided to six study groups including 1-negative control, 2-treatment control (received 10% black tea brewed drink (BTBD)),3-positive control which received cd(5 mg/kg body weight (bw.)/day) and 4 to 6-treatment groups in which BTBD was administered orally (2,5 and 10%) with oral cd(5mg/kg bw./day). The rats were sacrificed after 4 weeks and blood samples were collected to assess liver biomarkers. liver samples were fixed in buffered formalin solution . They were then conventionally embedded in paraffin and stained with Hematoxilin - Eosin for pathology studies as well. In positive control group, activities of alanine transaminase(ALT), aspartate transaminase(AST) and alkaline phosphatase (ALP) significantly increased in compare with negative control group. Granular degeneration, chromatin and nucleus concentration and necrosis were evidenced in pathological study of the liver sections of this group. On the other hand, 5 and 10% BTBD administration significantly prevented ALT,AST and ALP increasing activity. Pathological study confirmed the latter serological results. Whereas, 2% BTBD administration didn't have any significant protection. in conclusion, our results suggest that daily black tea drinking may prevent cd-induced hepatic lesions.

Key words: *Hepatotoxicity, Cadmium, Black Tea, Rat.*

Distribution of *staphylococcal enterotoxin* A gene among *Staphylococcus aureus* isolates from traditional white–brined cheese

Mohammadi, Kh.*

** Department of Food hygiene and Aquatics, College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran. (mohammadi.kh@gmail.com, mohammadi@iaut.ac.ir)*
** Biotechnology Research Center, Tabriz Branch, Islamic Azad University, Tabriz, Iran.*

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The consumption of food containing staphylococcal enterotoxins is regularly identified as the cause of intoxication. Enterotoxin A is considered as the most common toxin in staphylococcus–related food poisoning. The purpose of this study was to determine the prevalence of *S. aureus* in traditional white–brined cheese and distribution of enterotoxin A gene (*sea*) among them. A total of 120 samples was examined and *S. aureus* was isolated from 11 (9.1%) of the samples. According to the results, load of *S. aureus* was estimated from 1.5×10^1 to 8.6×10^4 cfu/g. No sample was in the critical cell density of $>10^5$ cfu/g. From each sample, five suspected colonies were confirmed by biochemical tests. *S. aureus* isolates were further identified based on 23S rRNA, themonuclease and enterotoxin A genes using multiplex PCR. Based on multiplex PCR results all 55 isolates were identified as *S. aureus*. The enterotoxin A gene (*sea*) was detected in 6 (10.9%) of the isolates. In conclusion, *S. aureus* and *sea* gene was found in traditional white–brined cheese. It seems that if the favorable growth conditions are provided, *S. aureus* could proliferate and produce enterotoxin and could be regarded as a potential risk for human health.

Key words: *Traditional White–Brined Cheese, Staphylococcus Aureus, Gene, Enterotoxin, Multiplex PCR.*

Histological alterations in *Fenneropenaeus indicus* fed diets containing different doses of Aflatoxin B_1

Ghaednia, B.[1]*, Bayat, M.[1], Sohrabi Haghdoost, I.[1], Motallebi, A.[2], Sepahdari, A.[2]

1- Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran (babak.ghaednia@gmail.com).*
2- Iranian Fisheries Research Organization, P.O.Box: 14155-6116, Tehran, Iran.

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In this study Indian white shrimp, *Fenneropenaeus indicus*, (11.79 ± 1.76 g) were fed with diets containing 0, 20, 50, 100, 200, 400, 800 and 1600 ppb levels of AFB_1 for 8 weeks. Histopathological alterations in the hepatopancreas, such as hepatopancreas tubules stellar cross section deformation, reduce degenerative changes and atrophy of epithelial cells and secretory cells lining the tubules, hepatopancreas tissue necrosis and infiltration of fibroblasts in the walls of hepatopancreas tubules were observed. In Muscle tissue, muscle bundles separated from each other and create a gap between them was observed, which confirms the weight loss in 800 ppb $AFLB_1$ treatment. Intestinal mucosal necrosis and detachment were observed in midgut tissue at the end of 4 and 8 weeks.

Key words: *Aflatoxin B_1, Fenneropenaeus Indicus, Histopathological Alterations.*

Histopathological evaluation of the effect of *Mentha piperita* essential oil on cutaneous wound healing in rats infected with C. albicans

Farhangi Ghaleh Joughi, N.[1], Farahpour, M.R.[2*], Neiriz Naghadeh, M.[3]

1- Department of Basic Sciences, Faculty of Science, Urmia Branch, Islamic Azad University, Urmia, Iran.
*2 * - Department of Clinical Sciences, Faculty of Veterinary Medicine, Urmia Branch, Islamic Azad University, Urmia, Iran.(mrf78s@gmail.com)*
3- Department of Pathobiology, Faculty of Veterinary Medicine, Urmia Branch, Islamic Azad University, Urmia, Iran.

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Wound infections caused by *Candida albicans* has grown substantially in recent years. Expensive medications, side effects, and particularly, the development of drug resistance, led to the use of biological materials may be considered as an alternative solution. Studies show that *Mentha piperita* essential oil contains flavonoids and menthol and hence it has antibacterial properties. We used 100 male Wistar rats (weight 195-205 g). One square surgical wound with dimensions of 1.5×1.5 cm were performed on the back of each animal and immediately became infected whit 0.1 ml of 1.5×107 CFU *Candida albicans* suspension. Then the rats were divided into 4 groups (control, placebo, treatments 1.5% and 3%) each with 25 rats and randomly distributed into 5 subgroups each whit 5 rats (sample groups on different days). Wound healing activity was performed by histological studies and yeast counts at the end of 4^{th}, 8^{th}, 12^{th}, 16^{th} and 20^{th} days after surgery. According to the pathological findings, *Mentha piperita* essential oil topically, significantly reduces inflammation and migration of leukocytes, and also significantly increase in vascular regeneration, epithelialization and migration of fibroblasts, compared control group. *Mentha piperita* essential oil, especially in higher doses (3%), increased pathological factors affecting wound healing in rats was infected with Candida albicans.

Key words: *Mentha Piperita, Candida Albicans, Wound Healing, Rat.*

Comparative study of sedation and pre-anesthetic effects of polar, semi polar and non-polar fractions of vinca minor extract in comparison with midazolam in rat

Rezaei, A.[*1], Issabeagloo, E.[2], Pashazadeh, M.[3]

1- Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran. (a-rezaie@iau-ahar.ir)*
2- Department of Pharmacology, Tabriz Medical Sciences branch, Islamic Azad University, Tabriz, Iran.
3- Young researchers and elite Club, Ahar Branch, Islamic Azad University, Ahar, Iran.

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Periwinkle is a plant known as a Vinca minor in Persian. This plant contain bitter substance called Vincine, Tannin, Pectin, Carotene, vincamine Alkaloids, Vinci nine, Catarin, and a kind of Saponin and large amount of Vinine Alkaloids and Pubcine. All parts of this plant can be used; especially the leaves that can be picked in any season and seared by heat. The purpose of this study is evaluating sedation and pre-anesthetic effects of polar fractions, semi polar and non-polar of Vinca minor plant in comparison with midazolam found in rats. 60 Wistar rat head in different groups is applied in these tests. Three polar, semi-polar, and non-polar fractions and 0.04 mg/kg dose of midazolam and dimethyl sulfoxide (DMSO) with equal volume are transfused into peritoneum as a drug, half an hour before experiment. In a test the sedation and pre-anesthetic induction time and sleeping time effects are surveyed by seconds and recorded by chronometer. Findings show that in medical team the mentioned doses of extract meaningful both in infused dream by ketamine and increase in life time ($p<0.01$). According to sedation and pre-anesthetic effects of this plant, studies indicate that polar fraction of Vinca minor with 100 mg/kg dose has sedation, pre-anesthetic effects.

Key words: *Sedation, Pre-anesthetic, Polar, Semi-polar, Non-polar, Vinca Minor.*

Study of Anisakidae family nematodes in wild and cultured yellow-fin seabream (*Acanthopagrus latus*) in north coasts of Persian Gulf, Iran

Rasouli, S.*

* *Department of Pathobiology, Faculty of Veterinary Medicine, Urmia Branch, Islamic Azad University, Urmia, Iran(Sohrab_rasouli86@yahoo.com)*

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In one year period, 276 wild (n=169) and cultured (n=107) yellow-fin seabream fish were studied for parasitic diseases and associated intestinal lesions in north coasts of Persian Gulf. Overall, 4 different nematode species of Anisakidae family isolated including Anisakis larvae (from intestine, abdominal cavity, liver and intestine surface), Contracaecum larvae (from intestines and abdominal cavity), Raphidascaris spp. (from intestines) and Hysterothylacium spp. (from intestines). The highest and lowest rate of infection with Contracaecum spp. was seen in winter and autumn, respectively; and that of Hysterothylacium spp. occurred in winter and summer, respectively; and with Anisakis spp. such rates were seen in summer and autumn, respectively. All of seasonal variations in infection rates were significant. A significant positive correlation was found between weight of fish and parasite burden. This is the first report of Hysterothylacium spp. in the yellow-fin seabream.

Key words: *Fish, Yellow-fin Seabream, Anisakide, Wild, Cultured*

The Effect of hordeum vulgare L. on the development of lung tissues in the embryo of diabetic albino rats

Arbabi, F.[1], Minae zangi, B.* [2], Sadooghi, M. [3]

1- MSc in Biology – Zoology, Evolution, Biological Sciences Department, Islamic Azad University Tehran Shomal Branch, Tehran, Iran

2- PhD in Tissue and Medical Embryology, Associate Professor in Histology Group, Medical Sciences, Tehran University of Medical Science, Tehran, Iran(minaezb@sina.tums.ac.ir)*

3- PhD Biology – Zoology, Professor in Biology Group, Biosciences Department, Islamic Azad University Tehran Shomal Branch, Tehran, Iran.

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The goal of this research is to see how barley grains affect the development of lung tissues in the embryo of diabetic albino rats. An empirical study was done on 60 albino rats in four groups: 1. Control, 2. Healthy + barely diet, 3. Diabetic + normal food, 4. Diabetic + barely diet. A peritoneal injection of streptozotocin was used to develop diabetes in the rats. In the 21st day of pregnancy the embryos were removed from the uterine horns, weighed and measured from head to tail. After tissue processing, H&E staining was done and the embryos' lung tissues were analyzed using an optical microscope. The diabetic + normal food group showed less development in bronchioles, alveoli and pneumocyte compared to the control group and had hyperemic vessels and the most inflamed alveolar interstitial tissue. The diabetic + barely group had more developed bronchioles, alveoli and pneumocyte compared to the diabetic + normal food group. This group has fewer hyperemic vessels and inflamed alveolar interstitial tissue compared to the diabetic + normal food group. The embryos in the diabetic + normal food increased in weight while the diabetic + barely group had a slight decrease in weight. However, the decrease in weight was not significant. The head to tail length of the embryos in the diabetic + normal food decreased compared to the control group and barely had no effect on the head to tail length in the diabetic + barely group. It seems that barely is beneficial on the development of lung tissues in the embryo of diabetic albino rats. Barely can regulate the excess weight caused by diabetes to some extent; however, it has no effect on the reduction of head to tail length caused by high glucose.

Key words: *Diabetic, Barely, Development, Lung, Streptozotocin*

The evaluation of sodium molybdate effect on liver fibrosis in a rat model of bile duct ligation

Ale Ebrahim, M.[1]*, Eidi, A.[2], Mortazavi, P.[3], Tavangar, S.M.[4], Minai Tehrani, D.[5]

1- Ph.D of Animal Physiology, Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran. (mahsa.alebrahim@yahoo.com)*
2- Associate Professor, Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran.
3- Assistant Professor, Department of Pathology, Faculty of specialized Veterinary, Science and Research Branch, Islamic Azad University, Tehran, Iran.
4- Professor, Department of Pathology, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran.
5- Assistant Professor, Department of Biology, Shahid Beheshti University, Tehran, Iran.

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The accumulation of hydrophobic bile acids in bile duct ligation (BDL) animal model, plays a pivotal role in the induction of hepatic fibrosis. Cholestatic liver fibrosis, characterized by excessive accumulation of extracellular matrix (ECM) proteins, is associated with bile acid-induced oxidative stress and lipid peroxidation. Molybdenum is an essential trace element which acts as a cofactor in many detoxification system enzymes. The results of our previous study suggested that sodium molybdate could be used as a hepatoprotective agent against toxicity caused by carbon tetrachloride in rats .The aim of the present study was to evaluate the therapeutic or the anti-hepatofibrotic effects of sodium molybdate in a bile duct ligation (BDL)-induced cholestatic fibrosis model in rats .After BDL, rats were given sodium molybdate (0.05 or 0.1 or 0.2 g/kg) or urosodeoxycholic acid (UDCA, 25 mg/kg) orally for 45 consecutive days (once per day). BDL markedly induced the accumulation of collagen, as well as infiltration of inflammatory cells, hepatocyte necrosis and bile duct hyperplasia, as determined by Masson's trichrome staining. These alterations were significantly attenuated by sodium molybsdate administration (0.1 and 0.2 g/kg). Simultaneously treatment of sodium molybdate may inhibit the liver fibrosis in a BDL model of cholestatic rats. Our data suggest that sodium molybdate may exert its antifibrotic effects via inhibition of ECM proteins.

Key words: *Bile duct ligation (BDL), Cholestasis, Liver fibrosis, Rat, Sodium molybdate*