Effect of injection of GnRH and hCG on day 5 post mating on maternal P_4 concentration and reproductive performance in Afshari ewes

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Embryonic mortality is a common cause of economic loss in sheep. Insufficient luteal function and low concentration of maternal progesterone is one of the major reasons of this mortality. This study was conducted to investigate the effects of GnRH and hCG administration on day 5 after mating on reproductive performance in ewes. Total of 60 synchronized ewes were mated with fertile rams and equally were assigned to four groups. Ewes in GnRH, hCG and hCG+GnRH groups (n=15/group) received an i.m. injection of 25 µg GnRH analogue, 400 IU hCG and 25 µg GnRH analogue + 400 IU hCG on day 5 post-mating, respectively. The ewes in the control group (n=15) did not receive any treatment. Blood samples were collected on days 7, 12, 17 and 22 post-mating. Plasma P_4 concentrations were higher at days 12 and 17 and 22 postmating in GnRH, hCG and hCG+GnRH treated ewes than those of control ewes ($P < 0.05$). There was no difference in lambing rate and litter size of ewes as well as in birth weight of lambs in different groups. Weaning weight of single lambs in hCG+GnRH group (34.08 ± 0.12 Kg) was greater than that of other groups. In conclusion, the results of this study demonstrated the efficiency of GnRH and hCG administration on day 5 after breeding to increase the maternal P_4 concentrations. However, there was no significant effect of such hormonal treatments on reproductive efficiency of Afshari ewes.

***Keywords**: Reproductive performance, Ewe, Post mating, GnRH, hCG*

The effect of folic acid on sperm parameters on testicular ischemia-reperfusion injury in rat

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Ischemia reperfusion definition is the return of blood to ischemia tissue. In this study, the effects of folic acid as a drug, on testicular function in adult rats were studied after induction ischemia/reperfusion. In this study, 36 male Wistar rats, the weight range between 250-300gr, were selected and divided into 6 equal groups randomly. The Control group: The Group has not received any medication and every day the same volume of distilled water was administered like other groups and after a week the abdominal cavity was opened and the left testicle was removed. The Sham group: The group has not received any medication and every day the same volume of distilled water were administered like other groups and after a week the abdominal cavity was opened and after removal of testicle from the scrotum and replacing, the abdominal cavity reclosed. I/R group: The group has not received any medication until indication of ischemia/reperfusion and every day the same volume of distilled water were administered like other groups and after 1 week the abdominal cavity was opened, and left testicular vein and artery was constricted for 1 hour thus the experimental ischemia reperfusion was induced and after 24 hour, the abdomen was opened and the left testis along with the left epididymis was extracted. 4^{th},5^{th},6^{th} group: these groups were administered orally with (2, 5 & 10 mg/kg) of folic acid for 1 week, the abdominal cavity was opened, and left testicular vein and artery was constricted for 1 hour thus the experimental ischemia reperfusion was induced and after 24 hours the abdomen was opened and the left testis along with the left epididymis was extracted.
After the rats were euthanized the epididymis were removed and then by scissors were cut into small pieces to allow sperm comfortable out there and immediately placed in 5 ml HBSS environment and for 20 minutes on a hot plate was incubated at 37°C and then evaluate sperm parameters (sperm count and sperm vitality and motility) were performed. The data were statistically analyzed and statistics on the percentage of progressive motility, sperm viability and sperm concentration per unit volume of folic acid showed significant difference ($p<0.05$) compared to I/R group. Based on the results obtained, it seems Folic acid can behave appropriate and acceptable effects to Prevention of Ischemia-reperfusion injury in rat testis.

Keywords: *Testicle, Ischemia/ reperfusion, Folic Acid, Rat*

Investigation of antibiotic resistance patterns in Escherichia coli isolated from broiler chickens with colibacillosis to ten antibacterial agents commonly used in the Iranian poultry industry

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Colibacillosis is one of the most important of bacterial diseases in poultry industry with huge economic losses that is caused by Escherichia coli. Various antimicrobial agents were used in order to reduce the losses associated with colibacillosis infection. But in recent years, enormous use of antibiotics in poultry medicine has been increased antimicrobial resistance among bacterial strains that lead to reduce efficacy of drugs. The purpose of this study was to determine the Antibiotic resistance rate of 178 E. coli isolated from 40 broiler flocks with clinical signs of colibacillosis in Ardabil province, northwest of Iran. The Antibiotic resistance pattern of isolates to ten antibacterial agents commonly used in the Iranian poultry industry was determined by disc diffusion test. According to the results, resistance rates to tetracycline, erythromycin, trimethoprim - sulphadiazine (sultrim), enrofloxacin, neomycin, danofloxacin, colistin, ampicillin, florfenicol and lincospectine were 99.43%, 97.75%, 80.34%, 77.53%, 75.84%, 69.66%, 68.54%, 60.11%, 58.99% and 36.52%, respectively. There were 51 drug resistance patterns among 178 E. coli isolates to ten antibacterial agents commonly used in the poultry industry that 142 isolates (79.78%) belonged to more than one pattern, whereas 36 isolates (20.22%) each isolate belonged to one pattern only. The results of this study show the high frequency of resistance to antimicrobial agents commonly used in the Iranian poultry industry. So, National monitoring programs is strongly needed for antimicrobial resistance and rational use of antibiotics.

Key words: *Colibacillosis, Escherichia coli, Antibiotic resistance pattern, Broiler chickens*

Effect of regular aerobic exercise on cardiac ischemia-reperfusion injury in the rats

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Ischemia/Reperfusion (I/R) injury is one of the most important cardiovascular problems. The aim of this study was to evaluate the protective effects of short term and regular growing long term aerobic exercise on cardiac I/R injury in rats. For this purpose, forty male Wistar rats were randomly divided into four equal groups including: control, I/R, I/R with two weeks of aerobic exercise, and I/R with eight weeks of regular growing aerobic exercise groups. Aerobic exercise was performed 5 times per week on treadmill at speed of 10-25m/min for 10-30 minutes with the slope of 5 degrees. For inducting of I/R injury, left descending coronary artery was clamped for 30 minutes, thereafter blood flow was restored for 2 hours. Blood samples were collected for measurement of cardiac biomarkers, creatinine kinase-MB (CK-MB) and lactate dehydrogenase. Finally, all animals were euthanized for histopathological examination and the assay for myocardial antioxidant status. Microscopically, myocardia of I/R group showed severe degenerative and necrotic changes. Short term aerobic exercise did not alter the tissue damage caused by I/R, while regular growing long term aerobic exercise alleviated myocardial necrotic changes. Regular growing long term aerobic exercise significantly (p<0.05) increased the cardiac levels of SOD, CAT and GPx, which were reduced due to I/R injury, as well as significantly (p<0.05) decreased MDA level. The results showed regular growing long term aerobic exercise protects the cardiac tissue of rats from I/R injury.

Key words: *Heart, Aerobic Exercise, Ischemia/Reperfusion, Rat*

Slaughterhouse prevalence of *Parabronema skrjabini* associated with pathologic lesions in small ruminant

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Gastrointestinal parasites (GIN) cause weight loss and reduced productions especially in small ruminant especially in subclinical parasitic infections. Severity of infection depends on geographical condition and climate area. Information about various parasites can be effective in better diagnosis and treatment. *Parabronema skrjabini* is one of a common abomasal nematode. No study is present on the pathologic findings and hypobiotic larvae of this nematode in the veterinary literature. Therefore, this study was designed to determine the prevalence of parasite, pathologic lesions and arrested larval stage in sheep and goats in Kerman province. In the present study, the abomasums of 1189 slaughtered sheep and goats were selected randomly and examined grossly for detection of nematodes. 807 (67.87%) out of 1189 infected abomasums with different nematodes that 307 (32/12%) samples showed pure contamination with *Parabronema skrjabini*. 247out of 307 abomasums were randomly selected for tissue digestion with pepsin and histopathologic investigation. No larvae were found in digested tissues. In pathologic study, the mucosal erosions and ulcers, thickening of abomasum mucosal later and increasing mucus secretion were grossly observed. Histopathologic study showed hyperplasia of mucosal cells, decreasing of parietal cells, inflammatory reaction including lymphocytes and eosinophils infiltration associated with different sections of adult nematode in the abomasal glands. Also, granulomatous inflammation was found around some nematode sections.

***Keywords**: Parabronema skrjabini, Larvae, Histopathological, Sheep, Goats*

A comparative study between Vancomycin and Enrofloxacin in Heterophil: Lymphocyte ratio, toxic heterophils and Colony counting in experimental Methicillin resistant staphylococcus aureus osteomyelitis in rabbits.

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Osteomyelitis is one of the most important life threatening conditions in medicine and veterinary subsequently localized through infection agent following sepsis by bacteria or from trauma, soft tissue, or even following the orthopedic surgery. From among various inflectional agents, MSSA aureus which is sensitive and resistant to MRSA Methicillin play important role in causing osteomyelitis staphylococcus. Since today it is reported from around the world species resistant to vancomycin which is applied as primary treatment in the cases of acute osteomyelitis resulted from MRSA, efforts to find out alternative treatment is a matter of concern for researchers. In this study, 18 New Zealand white rabbits were divided in to 3 groups of control, vancomycin and enrofloxacin. Rabbits were infected by CFU106 from bacteria in diaphysis of tibia bone and after two weeks ensuring that the acute osteomyelitis induced in tibia bone tissues, rabbits were distributed in 3 groups randomly. Before and after inducing osteomyelitis, inflammatory parameters of heterophil to lymphocyte ratio and toxic changes were measured. After two weeks' treatment in groups of treatment, two weeks were considered as rest too. after that bones sent for colony counting and microbiology examination. Findings of statistical analysis showed that the difference between control group and vancomycin and control group and enrofloxacin in introduced parameters was significant ($P<0.05$), however there was not significant difference between the groups of vancomycin and enrofloxacin ($P<0.05$). It is supposed that vancomycin could be substituted by enrofloxacin in acute osteomyelitis resulted from MRSA.

Keywords: *Experimental Osteomyelitis, MRSA, Vancomycin, Enrofloxacin, Heterophils/ Lymphocytes Ratio.*

Anatomical and histomorphometrical study of the Lingua and its Papillae in the Hedgehog (*Hemiechinus Auritus*)

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The present study was carried out to describe the anatomical and histological features and papillae of the tongue in Hedgehog. For this study, five healthy adult male hedgehogs were used in 500 gr average weigh. After euthanized, the tongues were separated from hyoid bone and the floor of the oral cavity by cutting the root and frenulum linguae and then, tissue samples were fixed in 10% buffered formalin for laboratory operations. Light microscopy observations showed that the dorsal surface of the tongue is formed of three consecutive layers; mucosa, submucosa and muscularis. The mucosal layer in three regions of apex, body and root consists of stratified squamous epithelium with variable degrees of keratinization and contains different types of papillae: filiform, fungiform and vallate-papillae. Filiform papillae were thorn-like with no secondary divisions. Fungiform papillae were dome-shape and aggregated on the lingual body. Two vallate papillae were detected on posterior end of the tongue. These papillae were largest and least numerous. No foliate papilla was observed. Also, revealed that the thickness of epithelium was reduced from the rostral to the caudal. Compare the results of this study to the other reports in rodents showed that hedgehog's tongue anatomical and histological features is more similar to rabbit's tongue.

***Keywords**: Anatomy, Histology, Tongue, Papilla, Hedgehog*

Evaluation of some of the liver biochemical parameters in the diagnosis of dairy cows with cholangitis and cholangiohepatitis

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Cholangitis and cholangiohepatitis may lead to liver failure in ruminants and biopsy is the most reliable test for diagnosis although it is an invasive and costly procedure. The objective of this study was: 1) to evaluate the liver biochemical parameters in cows with cholangitis and cholangiohepatitis, 2) to compare their sensitivities and specificities with biopsy and 3) to estimate their odds ratios using Bayesian logistic regression. A total of 90 serum and liver samples were collected from two slaughterhouses around Tehran and after pathological examination of the liver sections, a total of 14 samples were diagnosed as cholangitis (n=7), cholangiohepatitis (n=7) and 19 cases were considered as healthy and the remained ones had other pathological injuries. The activities of liver enzymes including AST, ALT, ALP, GGT, PON1, PKC as well as NEFA and BHBA concentrations in the serum samples were measured. Bayesian logistic regression was used to analyze the changes of the studied variables in cows with cholangitis and cholangiohepatitis compared to the healthy cows based on the best model.
In the present study, PON1 activity had no change in the cholangitis group but showed an insignificant increase ($P>0.05$) in cows with cholangiohepatitis compared to the control group. PKC serum activity decreased in both cholangitis and cholangiohepatitis groups, insignificantly ($P>0.05$). NEFA showed an insignificant increase in cholangitis ($P>0.05$) and BHB had a significant decrease in cholangiohepatitis group ($P<0.05$). According to logistic regression model, ALT, ALP, GGT, NEFA, BHBA and PON1 are the variables which can be used for prediction of cholangiohepatitis.

Keywords: *Cow, Cholangitis, Cholangiohepatitis, Liver biochemical parameters*