

Experimental study of histopathological lesions induced by *ornithobacterium rhinotracheale* infection followed inoculation with H₉N₂ avian influenza virus
Goudarzi, H.^{*1}, Azizpour, A.², Charkhkar, S.³, Hablolvarid, M.H.⁴, Momayez, R.¹

1-* Department of Avian Diseases Research and Diagnosis, Razi Vaccine and Serum Research Institute, Karaj, Iran. (H.goudarzi@rvsri.ir)

2- Meshginshahr Faculty of Agriculture, University of mohaghegh Ardabili, Ardabil, Iran.

3- Department of Poultry Diseases, Science and Research Branch, Islamic Azad University, Tehran, Iran.

4- Department of Pathology, Razi Vaccine and Serum Research Institute, Karaj, Iran.

(Received: 17 Sep 2015 Accepted: 25 Jan 2016)

Avian influenza virus as a primary agent causes histopathologic lesions in infected chickens. Although, it was not any complete histopathologic study of ORT effects on chickens infected with avian influenza virus. The purpose of this study was to evaluate histopathological lesions induced by secondary infection with *Ornithobacterium rhinotracheale* on infected specific pathogen-free (SPF) chickens with H₉N₂ AI virus. Sixty, one-day-old SPF chicks were provided and divided randomly into three groups. At 21 days, the chicks in the group 1 were inoculated with H₉N₂ AI virus, group 2 was first infected by AI virus and 3 days later inoculated by ORT. Each bird in control group was inoculated with PBS. Then, the birds were euthanized and examined for histopathological lesions. The samples from various tissues were collected at 2, 4, 6, 8, 10, 12, 14 and 16 days post-inoculation (DPI). Histologic lesions in infected groups were observed as follow: congestion and hyperplasia of epithelium in trachea, pneumonia, hemorrhage and urinary tubules necrosis in kidneys, congestion of sinusoid spaces and portal vein in liver, lymphocyte depletion in the bursa of fabricius, hyperplasia of lymphoid Follicles in spleen, congestion and heterophil infiltration in thymus and increased of lymphoid Follicles in cecal tonsil. The results of this study showed that infected chickens by H₉N₂ AI virus under secondary infection with ORT cause increased histopathological lesions induced by virus.

Keywords: *Influenza virus, ORT, Histopathological lesions, SPF chickens*

Experimental study on protective effects of Crocin on nephropathy induced by complete unilateral ureteral obstruction in the rats

Kaffashi Elahi, R.^{*1}, Mohajeri, D.²

1-^{*} Assistant Professor, Department of Clinical Sciences, Diseases of Small Animal Section, College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran (Elahi@iaut.ac.ir ; ramnazad56@gmail.com)

2- Professor, Department of Pathobiology, Pathology Section, College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran

(Received: 9 Oct 2014 Accepted: 16 Feb 2015)

Any obstruction to urinary flow leads to obstructive nephropathy. The aim of this study was to evaluate the renoprotective effects of Crocin following unilateral ureteral obstruction in the rats. Forty male Wistar rats were randomly assigned into 5 equal groups. Groups 1 and 2 were considered as control and sham operated rats, respectively. In group 3 left ureter was obstructed surgically and in group 4 following the left ureteral obstruction, Crocin was gavaged at 50 mg/kg for 15 days. Finally, blood samples were collected for measurement of serum urea, acid uric and creatinine. Malondialdehyde and reduced glutathione contents for assessment of renal free radical activity; and enzymatic activities of glutathione peroxidase, superoxide dismutase and catalase as indicators of antioxidation, were measured in kidney homogenates. Histopathology of left kidney was conducted for verification of biochemical findings. Significant differences among the groups were determined by one-way analysis of variance followed by Tukey post-test. Statistical significance was considered at $p < 0.05$. Unilateral ureteral obstruction caused significant increase of serum urea, uric acid and creatinine levels and renal content of malondialdehyde; as well as significant reduction of renal antioxidants and reduced glutathione contents. Crocin-treatment significantly reduced elevated markers of renal injury in serum and kidney malondialdehyde; as well as brought back the declined kidney antioxidants and reduced glutathione towards normal. Histopathology of kidney confirmed the changes induced by ureteral obstruction and the renoprotective effect of Crocin. Crocin exerts protective effects in unilateral ureteral obstruction possibly through its antioxidant properties.

Keywords: *Kidney, Obstructive nephropathy, Crocin, Rat*

Clinical report of unilateral temporomandibular joint ankylosis and its treatment in a Persian cat

Fattahian, H.R.^{1*}, Mohyeddin, H.², Moridpour, R.¹, Jazini Dorcheh, M.³, Farahani, Khomejani, F.¹, Fahim Dezhban, H.³

1- Department of Clinical Sciences, Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran-Iran. (Hamidrezafattahian@yahoo.com)*

2- Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Garmsar-Iran.

3- Undergraduate DVM Student, Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran-Iran.

(Received: 1 Nov 2014 Accepted: 15 Feb 2015)

A 7-month-old female Persian cat, 2.700 kg body weighting with a history of mandibular soft tissue swelling and an inability to open the mouth has been referred to private small animal clinic. The complications due to trauma to the jaw in three months and the lack of proper treatment, was created in clinical examination. The cat was disable to clean itself and softened canned food was eaten manually. The physical examination revealed the malocclusion of the mouth, the deviation of the mandible and atrophy of the right masseter musculature. Three-dimensional reconstructive CT and radiography were obtained. Under general anesthesia, surgical treatment was performed to remove the ankylosis block with the excisional arthroplasty of head of mandible. After surgery, the cat showed good functional use of the mandible to open its mouth and taking food and water without discomfort.

Keywords: *Temporomandibular joint ankylosis, Arthroplasty, Three-dimensional reconstructive CT, Cat*

A survey on the prevalence of mycoplasmal infections in infectious bovine keratoconjunctivitis

Raofi, A.¹, Mottaghian, P.^{1*}, Madadgar, O.², Badiei, A.³

1-* Department of Veterinary Internal Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran (p.mottaghian@ut.ac.ir)

2- Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

3- Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Karaj Branch, Karaj, Iran

(Received: 21 Oct 2015 Accepted: 14 Feb 2016)

Infectious bovine keratoconjunctivitis (IBK) is the most common infectious ocular disease of cattle throughout the world. In addition to *Moraxella bovis* as the principal causative agent, Infectious Bovine Rhinotracheitis (IBR) virus and *Mycoplasma* species probably act as risk factors for IBK. The objective of this study is to investigate the prevalence of *Mycoplasma* sp. in the conjunctival sac of dairy cattle and its relationship with different stages of IBK. A total number of 60 samples from IBK-affected and healthy eyes were collected from different dairy farms during outbreaks of IBK and polymerase chain reaction (PCR) was employed to investigate the presence of *Mycoplasma* sp. in the conjunctival sac. In this study, affected and healthy eyes consisted 61.8% and 38.2% of those with positive PCR results. As well, cases of conjunctivitis, keratitis and corneal ulcers consisted 23.8%, 33.3% and 42.9%, respectively. In conclusion, although there was no significant difference, greater percentages of positive PCR results were IBK affected and in addition consisted more severe forms of the disease. Therefore, *Mycoplasma* sp. infection may have a role in the pathogenesis and severity of IBK lesions.

Keywords: *Infectious Bovine Keratoconjunctivitis, Mycoplasma sp., Dairy Cattle*

Molecular identification of *Aspergillus parasiticus* and *flavus* in forage samples by Duplex PCR method and comparison with culture and direct examination

Pedram, N.^{1*}, Bayat, M.¹, Shahhosseiny, M.H.^{2,3}, Bokaei, S.⁴, Ghahri, M.⁵

1-* Department of Mycology, Faculty of Specialized Veterinary Sciences, Islamic Azad University, Science and Research Branch, Tehran, Iran (nahidpedram@gmail.com).

2- Department of Microbiology, Shahr-e Qods Branch, Islamic Azad University, Tehran, Iran

3- Iranian Gene Fanavar of Institute (IGF), Tehran, Iran

4- Department of Food Hygiene, Faculty of Veterinary, University of Tehran, Tehran, Iran

5- Department of Biology, Faculty of Science and Engineering, Imam Hussein University, Tehran, Iran

(Received: 22 Apr 2015 Accepted: 4 Sep 2015)

Aspergillosis is one of infectious disease that it causes difficulties for human and poultry. The main aim of this study is the diagnosis of *Aspergillus parasiticus* and *flavus* in forage samples by Duplex PCR method and comparison with culture and direct examination. After extracting DNAs of standard strains of *Aspergillus parasiticus* and *flavus* along with primers of each fungus and PCR testing, genes of each fungus were amplified and PCR product was cloned using TA cloning by pTZ57R plasmid. After optimizing Duplex PCR (D-PCR) monoplex PCR tests, 50 forage samples by Duplex PCR method, culture and direct were tested. In the optimized PCR test, 343bp and 413bp products of *Aspergillus parasiticus* and *flavus* were respectively amplified. Fifty samples of forage by Duplex PCR method, culture and direct were tested. 13 samples were positive only by Duplex -PCR and 15 samples by both tests direct and culturing were positive and 26 samples were negative with three methods. Results of McNemar's test is equal about the three methods tests for diagnosing *Aspergillus parasiticus* and *flavus* ($p=0.824$). Molecular methods such as D-PCR are faster techniques than direct testing and culturing for diagnosis of *Aspergillus parasiticus* and *flavus* but there aren't difference between three methods for diagnosing *Aspergillus parasiticus* and *flavus* but with D-PCR we could diagnosis *Aspergillus parasiticus*.

Keywords: *Aspergillus parasiticus*, *Aspergillus flavus*, Duplex PCR, Forage

Histoanatomical study of the fibrous layer of ostrich eye

Ebrahimi Saadatlou, M.A.^{1*}, Shahrouz, R.²

1-* Department of Basic Sciences, College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz- Iran (ebrahimi@iaut.ac.ir).

2- Department of Basic Sciences, Faculty of Veterinary Medicine, Urmia University, Urmia- Iran

(Received: 28 Jan 2015 Accepted: 15 Jun 2015)

This study was conducted to understand the macroscopic and microscopic structure of the fibrous tunic of 20 healthy adult ostrich eyes. First, the fibrous tunic of the eye was anatomically examined in terms of appearance, dimensions, location and structure. Then prepared histological slides were studied microscopically after staining by H&E, Verhoeff, Van Geison and P.A.S. The results showed that in the ostrich ovally round cornea, the average corneal length (lateral-medial) and width (dorsal-ventral) were respectively measured as 2.58 ± 0.05 and 2.28 ± 0.04 centimeters. The corneal protrusion was 0.92 ± 0.02 . The thickest part of sclera was in the posterior portion of the eyeball, in optic nerve entrance. The whole thickness of cornea and its epithelium were measured $850 \mu\text{m}$ and $65 \mu\text{m}$ respectively. Anterior surface of cornea was nonkeratinized stratified squamous epithelium. There was Bowman's membrane with $7.5 \mu\text{m}$ thickness and positive P.A.S. reaction Descemet's membrane with $7.65 \mu\text{m}$ thicknesses. $450 \mu\text{m}$ -thick sclera in ostrich had frequent collagen fibers which supported by hyaline cartilage with $217.8 \mu\text{m}$ thickness. Moreover, there were no elastic fibers in cornea and a little in sclera. It concluded that although there were little differences in dimensions and microscopic studies, the fibrous tunic of ostrich was similar to other birds but different from mammals.

Keywords: Histoanatomy, Ostrich, Fibrous tunic, Sclera, Cornea.

Prevalence of antibiotic resistance genes in *Salmonella enteritidis* isolated from animal and human and determining their antibiotic resistance patterns

Amini, K.^{*1}

* Assistant Professor, Department of Microbiology, Saveh Branch, Islamic Azad University, Saveh, Iran
(Kamini@iau.saveh.ac.ir)

(Received: 11 Apr 2015 Accepted: 9 Aug 2015)

Salmonella is a member of the Enterobacteriaceae family. Infections in humans that are caused by these bacteria, are manifested as gastroenteritis, enteric fever (typhoid or para-typhoid) and septicemia. Class I integrons are the most common integrons found in the different serotypes of *Salmonella enterica*, that has caused multiple antibiotic resistance and problems in the treatment of infections resulted from these bacteria, in humans and animals. The aim of this study was to determine the prevalence of class I integrons in *Salmonella enteritidis* strains isolated from human and animal, and their antibiotic sensitivity or resistance. In this study, human (11 samples) and animal (13 samples) *Salmonella enteritidis* samples were received from the microbial collection of Islamic Azad University- Science and Research branch- faculty veterinary medicine . Then multiplex PCR experiments were performed to determine the frequency of class I integrons. Finally, agar disk diffusion method was used to determine antibiotic resistance pattern. The results showed that none of the 11 human *Salmonella enteritidis* strains had the class I integrons and 2 strains (15.3%) out of 13 animal *Salmonella enteritidis* had the class I integrons. As well 36.3% of human *Salmonella enteritidis* strains and 30.8% of animal *Salmonella enteritidis* strains showed multiple antibiotic resistance. Conclusion: In multiple-resistant strains that lacked class I integrons, resistance genes can be located on plasmids, transposons or other integron classes.

Keywords: *Salmonella enteritidis*, Class I integrons, Antibiotic resistance

