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**Evaluation of Transtracheal Wash in the Isolation of Bacteria spp. from Pneumonic and Healthy Dromedary Camels (*Camelus Dromedarius*)**

A thesis

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**Summary**

This study included the physical examination of 150 camels in different ages and genders suffering from respiratory signs from January 2013 to February 2014 in abattoirs of Al-Najaf and Al-Qadissiya provinces. After physical examination; clinical signs revealed extended neck, depression, anorexia, elevated heart rate (42-44bpm), irregular rapid breathing (19-24bpm) and fever in seventy-one cases that were diagnosed as interstitial bronchopneumonia (forty-six cases) and fibrinous pneumonia (twenty-five cases) and within normal in the other seventy-nine cases in which pneumonia was granulomatous. In order to make the diagnosis, Transtracheal Wash (TTW) used for getting samples from each case for cytology and bacteriology; Leukocyte count ranged in (925±3.7c/µl) in granulomatous pneumonia, (1104±7.59c/µl) in fibrinous pneumonia and (1369±9.23c/µl) in interstitial bronchopneumonia. Differential Leukocyte count recorded lymphocytosis in granulomatous pneumonia and neutrophilia in the fibrinous and interstitial pneumonia. Total Protein (TP) recorded (621±2.36mg/dl) in granulomatous pneumonia, (782±3.66mg/dl) in fibrinous pneumonia and (331±3.9mg/dl) in interstitial bronchopneumonia.

Bacterial culture from the TTW showed unique colonies on blood agar; that were identified by using the VITEK 2 compact technique and then confirmed by the conventional polymerase chain reaction (PCR) as; *Rhizobium radiobacter* inseventy-nine cases of granulomatous pneumonia which represent (53%) of the total 150 cases, *Sphingomonas paucimobilis* intwenty-five cases of fibrinous pneumonia which represent (16%), *Klebsiella pneumoniae ssp pneumoniae* in twenty-four cases of interstitial bronchopneumonia which represent (16%) and *Escherichia coli in* twenty-two cases of interstitial bronchopneumonia (15%).

Meantime, postmortem samples had worked for bacteriology to find the correlation between the results with the bacteriology of the transtracheal washes. Same isolates with two other postmortem contaminants; *Staphylococcus lentus* and *St. vitulinus*; were diagnosed biochemically, after purification on blood agar, by VITEK 2 compact technique; to affirm that TTW technique is highly accurate more than postmortem diagnosis and it should be used for the diagnosis of respiratory diseases. Histopathological examination on the postmortem samples, from which granulomatous, fibrinous and interstitial bronchopneumonia were found in both lungs of each camels with (53%), (16%) and (31%) in order which reveals that granulomatous pneumonia recorded the highest ratio of the types found in this study. All affected camels ranged in 4-8 years old. Gender was not significant in infection with *Rh. Radiobacter*, *Sph. Paucimobilis* and *E. coli* but it was significant in *Kl. pn. ssp. pneumonia* in which the males recorded 75%. Winter has the most significant records with 67% of the total cases, less in spring with 3%, no cases in summer and 30% in autumn.

Cytological analysis of transtracheal washes from ten apparently healthy camels in the same area of the study were done to find out the normal contents from healthy camels to be correlated with results of pneumonic camels because of the lack of similar studies around the world which makes it the first one. The value of total protein was (70±0.02mg/dl), white blood cells was (620±2.2c/µl) with lymphocytosis 60%. The normal contents of the transtracheal washes found in this study according to their amount were mucus materials, lymphocytes, macrophages, ciliated columnar or cuboidal epithelial cells, goblet cells, neutrophils & rarely basophils or eosinophils orderly.