Clinical and Molecular detection of M.haemolytica and K.pneumonia in sheep infected with pneumonia

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Abstract

This study was built-on clinical investigation of pneumonia caused by Mannheimia haemolytica and Klebsiella pneumoniae in sheep of Basrah province. Moreover isolation and identification was also done and confirmed by conventional PCR technique. Blood samples and nasal swabs were collected from 410 local sheep breeds of both sexes, and different ages including 385 suspected animals and 25 clinically healthy animals and the result showed that on of 410 suspected sheep 385 animals was found with clinical pneumonia .However diseased animals show signs of loss of appetite, depression, dyspnea,coughing and mucopurulent nasal discharge, Moreover on clinical examinations, diseased sheep show fever and abnormal lung sounds on auscultation of the lung. The primary laboratory diagnosis using bacterial culture and biochemical analysis indicated 81(21%) cases belong to M. haemolytica ,moreover 79(20.51%) were belong to K.pneumoniae. M.haemolytica characterised by moist, round, white or grey colony with β-type haemolysis on blood agar. However On MacConkey agar showed pink–red pin point colonies, whereas when stained by gram stain appeared as pink, short rods or cocobacilli and bipolar in methylene blue stain, Moreover the biochemical reactions revealed negative indole, urease and citrate whereas positive for oxidase and catalase tests. On the other hand K.pneumoniae appeared as pink - rods in gram stain, whitegrey colonies, without haemolysis on blood agar with mucoid consistency and fetid odour, However on MacConKey agar show large pink-reddish mucoid colonies which indicate lactose fermentation, whereas grown on EMB had dark mucoid colonies without metallic shine.Furthermore the biochemical reactions of K.pneumoniae reveal ; positive response for urease, citrate and catalase, and the reactions responded negatively for indole, oxidase and haemolysis. The PCR technique for M.haemolytica indicated that from 81 isolates there were 48 (59.2%) cases had evidence by Rpt2 amplification at 1022 bp., However K.pneumoniae were indicated in 31(39.2%) out of 79cases had proved ecpA amplification at 759 bp. primer for DNA in local sheep of Basrah province