ISOLATION OF ACINETOBACTER IWOFFII FROM BROILER CHICKEN WITH SEPTICAEMIA IN KASHMIR VALLEY

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ABSTRACT

Present communication describes the isolation of Acinetobacter iwoffii from two cases of broiler chickens, which died of respiratory distress, diarrhoea and leg weakness. The organism was found resistant to ampicillin, cloxacillin, amoxicillin, doxycycline and cotrimoxazole while as, it was sensitive to gentamicin, ciprofloxacin and pefloxacin. The consumption of undercooked meat from such infected chicken may lead to human infection.

Acinetobacter are short, stout, gram-negative cocobacilli, strictly aerobic, non motile, catalase positive and oxidase negative bacteria. Sometimes these organisms appear as diplococci in stained smears (Towner, 1998). Acinetobacter spp has long been recognized as a part of normal flora of skin of animals and humans besides being present in soil, water, sewage, food and milk. Experimental study on mice model revealed its pathogenic significance in causing pneumonia (Obana, 1986). It has been isolated from septicaemic hens suffering from haemorrhagic diarrhoea, emaciation, dyspnoea and cyanosis (Kaya et al., 1989) and mink suffering from bronchopneumonia (Quinn and Carter, 1999). The organism has significant role in spoiling poultry carcasses and grows better in leg muscle than breast muscle (Towner, 1998). In humans, nosocomial infection due to Acinetobacter spp can occur specially in immunocompromised patients (Quinn and Carter, 1999).

In India A. calcoaceticus has been isolated from cases of chronic haematuria in race-horses (Rajasekhar et al., 1978), mastitis in cow (Rahman and Baxi, 1985) and piglets (Ranganath et al., 1982), abortion in water buffalo (Das and Paranjape, 1986), keratoconjunctivitis in cattle (Batta et al., 1996). Though A. calcoaceticus has been previously isolated from carrier poultry (Arora et al., 1986), isolation of A. iwoffii from septicaemic chicken in the present study appears first report in India.

As a part of routine bacteriological examination of clinical samples referred to this Division from Teaching Veterinary Clinical Complex of Faculty of Veterinary Sciences and Animal Husbandry, (SKUAST-K), Shuhama, as well as from private owners, two whole broiler bird carcasses of Havard breed aged 3 weeks, belonging to a localite were received for post mortem examination. On inquiry the owners revealed that birds were off fed, having respiratory disturbances, yellowish white diarrhoea and weak legs. Post mortem examination of the carcasses revealed severe congestion in liver and heart. There was formation of greenish cast over the surface of liver and heart.

Heart blood, pieces of liver and intestinal contents were collected aseptically in a sterile petridish. A part of the morbid material was directly smeared on a clean glass slide and stained with Gram’s method. Microscopic examination of the smears revealed gram-negative pleomorphic (cocobacilli and diplococci) bacteria (Fig. 1). Another part of morbid material was inoculated directly on nutrient and MacConkey agar
(HiMedia, India) plates and incubated at 37°C. After 48 hr of incubation, small pale coloured colonies developed on MacConkey’s agar and small transparent colonies on the nutrient agar plates. A well-separated colony from both the nutrient and MacConkey’s agar plates was picked up into a nutrient agar slant as pure culture for further examination. Both isolates were identified as Acinetobacter iwoffii on the basis of morphological, cultural and biochemical tests (Buchanan and Gibbons, 1994). All the samples were also tried for isolation of Salmonella spp and Escherichia coli by using standard procedures (Wani and Gupta, 1986, Wani et al., 2004). None of the samples showed the presence of Escherichia coli or Salmonella spp.

The isolates were subjected to in-vitro antibiotic sensitivity tests using the disc diffusion method described by Bauer et al. (1966). The in-vitro sensitivity test was carried on over Mueller Hinton agar (HiMedia, Mumbai, India) plates using gentamicin, ciprofloxacin, pefloxacin, doxycycline, cotrimoxazole, ampicillin, cloxacillin, amoxicillin discs supplied by HiMedia. Both isolates were resistant to ampicillin, cloxacillin, amoxicillin, doxycycline and cotrimoxazole while as they were sensitive to gentamicin, ciprofloxacin and pefloxacin.

The consumption of undercooked meat from infected chickens may lead to human infection.

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REFERENCES
