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ISOLATION OF PATHOGENIC *STAPH AUREUS* FROM FROZEN CHICKEN LIVERS FROM LOCAL MARKETS IN BAGHDAD

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ABSTRACT
Staph aureus are pathogenic bacteria which cause food born-illness, the microorganism facultative anaerobes. Chickens and chicken's products regarded as the most factors that play important role the infection and cause food born-illness. The study was implicated in the diagnosis of the microorganism by microbiological cultural techniques and confirmed by different bacteriological analytical methods. Sixty samples was taking from different markets in Baghdad, the samples were cultured on different agars like (blood & mannitol salt) agars, the positive results was confirmed by different diagnostic methods like bacterial smear, coagulase and catalase test. From sixty samples was cultured only 35 samples show positive (isolates, coagulase and catalase tests). The research was implicated to isolate of *S. aureus* from frozen chickens to take proper manage to limit contamination

KEYWORDS: *Staph aureus*, Frozen Chicken Livers, Baghdad.

INTRODUCTION

Staph aureus is gram positive cocci, non- motile, non-spore forming, round & produce hemolysis on blood agar (Feizi *et al.,* 2012). The bacteria produce round yellow colonies (Rayan & Ray, 2014), and it's found on the skin, noise and respiratory tract, it is positive for catalase and nitrate reduction, *S. aureus* produces different enzymes such as coagulase prevent phagocytosis. Hyaluronidase, deoxyribonuclease, which breaks the DNA, lipase to digest lipids, staphylokinase to dissolve fibrin and aid in spread, and beta-lactamase for drug resistance (M.L.M.F.T.C). *S. aureus* can grow facultative anaerobe which means grow without need oxygen (Masalha *et al.,* 2001). *S. aureus* causes several infections like Cellulitis folliculitis, meningitis, and osteomyelitis (Moran *et al*., 2006). The multiplication of *S. aureus* reproduces asexually by binary fission, and this division was achieved by *Staph. aureus* outulysin, the result of the division (cells) remain attached one to gather and appear like clusters (Varrone *et al*., 2014). The poultry meat become important nutrition in the world thus the proper hygiene during handling with meat to prevent contamination of the meat due to their importance in the dissemination of infection because the bacteria was important pathogen of food poisoning (Kearny, 2010; Mor-Mur and Yuste, 2010). In all most developing countries, elements which poses the contamination of the poultry meat such as poor hygienic in poultry and old processing facilities, handling, transportation which rise significant contamination rates of market chicken products, high bacterial loads enter the operating processing with the living birds and these bacteria can be disseminated throughout the plant during processing (Bonmar, 1998). Sometime the recontamination of the poultry meat get when post cooking handling at the factory although the bacteria can be destroyed by cooking (Corner *et al.,* 2001). Many limitations associated with culture of chicken samples, although the method regarded the most slandered method for diagnosis of the pathogen in countries (Meiri-Bendek *et al.,* 2002; Phuektes *et al*., 2001).

MATERIALS & METHODS

Sixty samples of chicken livers were collected from different Iraqi markets in Baghdad. The samples were prepared for bacteriological isolation methods and cultural methods on rich media like Blood and special selective media like (MSA), and special biochemical test.

Diagnosis of *the* bacteria

The samples were cultures were on blood agar and incubated for 24 hrs. The positive results were sub-cultured on selective agar (MSA), and then examine the isolates by biochemical tests, gram stain.

RESULTS

TABLE 1: show the positive and negative results of *S. aureus*

Animal	Positive results	Negative results	Total number
Frozen chicken livers	35	25	60
	58%	42%	100%

TABLE 2: The results of coagulase and catalase tests

Type of test	Positive results	Negative results
Coagulase	58.4%	41.6%
Catalase	58.4%	41.6%

FIGURE1: shows *Staph aureus* colonies on blood agar

FIGURE 2: shows S. *aureus* on (MSA)

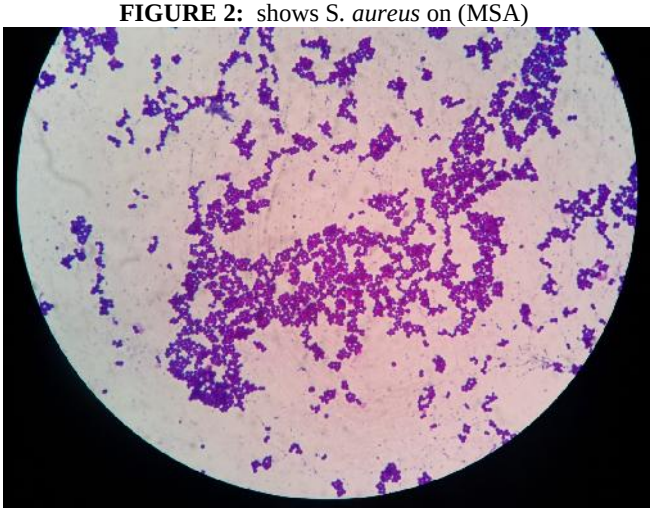

FIGURE 3: Bacterial smear of *Staph .aureus*

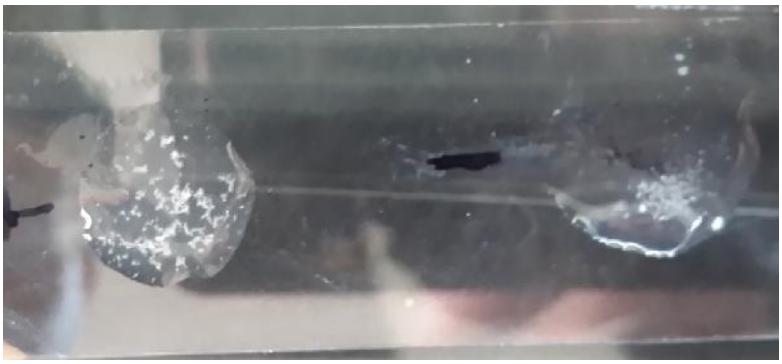

FIGURE 4: Shows the positive coagulation test

DISCUSSION

The contamination of the animal carcass play important role in food poisoning which lead to outbreak of food born-illness (Olsen *et al*., 2000). Conventional culture manner was used for isolation of bacteria by several researchers, in this study bacterial smear and special tests were performed for diagnosis in chicken samples. (Nkwelang *et al.*, 2009; Nandy *et al.*, 2009; Kateete *et al.*, 2010; Rohinishree and Negi, 2011; El-Hadedy and Abu El-Nour, 2012; Thaker *et al.*, 2013 and Al-Musawi, 2014). Our study shows, from sixty poultry samples only thirty chicken samples show positive growth on selective media than subjected to special biochemical tests to conform diagnosis of bacteria which show that all isolates show positivity for biochemical test. In this study, the infection rate was (58%), this result vary with other studies performed by other researchers like (Hanson *et al.*, 2011) (27 out of 165; 17.8%), (Shareef *et al.*, 2012) 47%, and (Kozacinski *et al.*, 2006) 30.30%, the variation in the percentage suggest that infection occur from contamination which lead to widespread health problem, level of contamination due to handling, processing, transportation and storage & level of exotoxins produce from *S. aureus* which effect level of contamination of meat with *S. aureus* (Gong *et al.*, 2002). The less percentage of bacteria by some researchers who found that addition of some agents that has antibacterial activity to the media that attack the bacteria on culture media like Fennel and Cardamom which had effected only against *S. aureus* but Fennel had weak effect on *Salmonella SPP*, *Bacillus SPP (*Agaoglu *et al*., 2007).

CONCLUSION

Our study indicate the pathogenicity of infectious agent and its effect due to contaminated of animal meat and chickens thus good hygiene and Proper management in the supermarkets to decrease the zoonotic disease transmissible from animal meat to humans.

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