ISOLATION OF ESCHERICHIA COLI FROM SKIN WOUNDS IN COW

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Abstract
Skin infections, consider the most frequent infections by several bacteria such as E. coli and could be develops to abscesses, septicemia and fistula. One hundred swab samples were collected from surfaces of skin lesions in cow were collected during the period from May, 2019 to July, 2019 from different areas at the Babylon governorate. Microbiological parameters biochemical tests were done to identification of E. coli isolates. The percentage of infection was 8% from total swab that have been taken from different skin lesions. The results of this study were taken to highlight the presence of E. coli in skin lesion to facilitate the work of a preventive and therapeutic programs to reduce the risk of these bacteria and improve the health status of cow.

Key words: Skin wounds, Isolation, E. coli, Cow, Iraq.

Introduction
Ruminants, particularly cow and sheep, have been implicated as a common reservoir of E. coli species that can be a potential source of human infection (Osman et al., 2013). Skin infections consider the most frequent infections in all age groups, the infections mostly are self limited or can be treated with antibiotics (Petkovšek et al., 2009). However, moderate or severe cases may require hospitalization and parenteral therapy (Moet et al., 2007).

These pathogens are responsible for large mortality and different morbidity changes at the same time constitute a risk to public health (Bolton et al., 2012). Affected of skin such as contaminations of wound are complicated mostly following slashes, injuries, entering injury and fights of animals, in ordinary creature raising practices, wounds were for the most part left overlooked to act naturally heal until they affect the general health and efficiency of the production such as calfskin quality, meat, or economy of the proprietor (Tiwari et al., 2015).

Whenever treated without correct determination, target treatment and imprudent utilization of allopathic medications, offers approach to development resistance to antimicrobial medication (Tiwari et al., 2013). Skin that contaminated superficially, which at first show up as agonizing, ulcerations red colour are trailed by clear to overcast release or may advance as patches of male pattern baldness, redness and scale. wounds are presumably the common well-known reasons for upgraded powerlessness of diseases, as they are inclined to contamination of bacteria. skin inflammation and affections is a typical condition particularly in little creatures and pets and highly causes are bacterial and contagious diseases separated from mechanical wounds and viral (Talan et al., 1996). Despite the fact that forecast of skin contamination isn’t impossible yet may antagonistically affect the working activity, inside abscesses, fistula and once in a while septicemia (Tyler et al., 1999).

Materials and Methods
Samples collection: One hundred swab samples were
isolated from skin lesions. A total one hundred skin lesions (wounds, laceration, trauma, ulceration etc.), just 8 isolates were detection as E. coli depending on morphological characteristic (Table 1) and confirmatory detection by biochemical tests (Table 2).

Table 1: Percentage of isolated E. coli from skin lesions.

| Bacterial name | No. of skin samples | No. of positive samples | %
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>E. coli</td>
<td>100</td>
<td>8</td>
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</table>

Results

The results revealed isolated of E. coli from skin wound in different areas of Babylon in cow. A total one hundred skin lesions (wounds, laceration, trauma, ulceration etc.), just 8 isolates were detection as E. coli depending on morphological characteristic (Table 1) and confirmatory detection by biochemical tests (Table 2).

Table 2. The reaction results of biochemical tests for E. coli.

<table>
<thead>
<tr>
<th>Biochemical test</th>
<th>Results</th>
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<tbody>
<tr>
<td>Voges Proskauer</td>
<td>-</td>
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<tr>
<td>Methyl Red</td>
<td>+</td>
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<tr>
<td>Simmon’s Citrate</td>
<td>-</td>
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<tr>
<td>Urease</td>
<td>-</td>
</tr>
<tr>
<td>Nitrate Reduction</td>
<td>+</td>
</tr>
<tr>
<td>Indole Production</td>
<td>+</td>
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<tr>
<td>Catalase</td>
<td>+</td>
</tr>
<tr>
<td>Mannitol</td>
<td>+</td>
</tr>
<tr>
<td>Glucose</td>
<td>+</td>
</tr>
<tr>
<td>Lactose</td>
<td>+</td>
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<tr>
<td>Lactose fermentation</td>
<td>+</td>
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</tbody>
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Discussion

The presence of E. coli in skin wound cause large problems regarding wound healing and health. The contamination of skin lesions could transmitted the infection to all body organs, so that detection of E. coli contaminated of skin lesions to facilitated the ways of control and treatment and improvement wound healing. This study to highlight the role of E. coli infection in skin lesions beside another bacteria such as Staph. aureus. In this study, the percentage of infection with E. coli in skin lesions were 8%, this results agreed with Khalil and Eraky, (2012) recorded the isolated of E. coli from skin swab in cattle to be 8.7%. However, this results disagreed with study of Tiwari et al., (2015) in animals in Pakistan who mention the percentage of skin wound contamination with E. coli to be 34.59%.

This can be ascribed to factors variation which can possibly influence skin infection, including farming systems, fecal contamination, related conditions, duration of transport and hygiene condition (Abdissa et al., 2017). Isolation of Staph. aureus was the first common isolate followed by E. coli in skin wounds (Tiwari et al., 2015).

This results in line with the microbiological analysis of another studies showed isolation of bacteria other than E. coli strains such as Staph. aureus, Streptococcus, Pseudomonas aeruginosa, Micrococcus, Klebsiella spp., Fusobacterium, Bacillus, Protius and Clostridium from different skin lesions in animals (Abrahamian and Goldstein, 2011).

However, our results in according with Silva et al., (1980), who reported the different biochemical test was need to isolation and identification of the E. coli as confirmatory analyse from skin lesion.

Conclusions

Skin lesions are contaminated by different bacteria and there are few studies about the E. coli infection in the skin lesions that consider one of the important bacteria that affect wounds and other skin lesions.

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References


