Qualitative risk analysis of brucellosis of importing animals and meat Libya

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Abstract

Aim of this research is to estimate the risk of ‘Brucellosis’ the cause of such disease penetrating in Libya. Recently Libya import domestic animals for people’s utilization in the form of frozen meat or dairy milk products. Moreover, Libya is concealed by importing domestic animals for flesh as well as dairy milk products usage. Meanwhile, importing animals with inadequacy of negligence could be observed with concerned authorities. Corresponding to disregard of epidemiology, risk assessment & hazard identifications are lead to severe consequences and must be appropriate consideration for using domestic animals to humans. However, the impoverished health hazards can be observed of those livestock’s while breeding for importation. To overcome, it is necessary to follow proper health inspection, maintain records using modern methods of epidemiology. Or else, it leads to import livestock who carries “Brucellosis”. If a single animal imported which have ‘Brucellosis’ then it can be spread efficiently in regional areas which make apprehensive to eradicate. In general, because of these things emerging of diseases in the country becomes an epidemic. This research has followed the approach of Qualitative Risk Analysis.

Keywords: Hazard Identification; Epidemiology; Risk Assessment; Risk Management; Epidemic; Brucellosis; Livestock’s

Introduction

Brucellosis is one of the greatest prevalent zoonotic diseases in many countries all over the world. In fact, brucellosis causes enormous economic impacts on livestock productivity, which can affect local and international trade in developing countries. Brucellosis is highly infectious disease causing undulant fever or Malta fever in humans.

Hazard identification

The first recognizing of brucellosis was in 19th century in cattle which can be noticed through death of dams, infertility, calf drop by 35-100%, and milk drop by 25% (Mahmoud 2009). Brucella also known as “undulant
fever”, “Mediterranean fever”, or Malta fever” is a bacterial zoonotic disease (M.J Corbel, 2006). Furthermore, Brucellosis is characterized by high morbidity rate, rapid expansion (OIE 2018).

1. Epidemiology

Even though brucellosis almost has eradicated, or is close to being, eradicated from some of developed countries, it still a main public and animal health matter in many parts of the world specially, where livestock are a major source of food and income. Brucellosis is a zoonotic disease affects domesticated animals, humans and various species of feral (wild) animals. Brucellosis in the reservoir species can cause abortion and hence delay or permanent infertility. Several ways that Brucella can transmit through them between animals and human as well (OIE 2018). Organisms are shed in uterine discharges after abortion, parturition, andcolostrum and milk by infected animals (A.Robinson.2003).

The bacteria can be survived in the environment for several months in moist-cool areas. The organism can survive a periods of time in animal products such as meat, ice-cream, butter, and cheeses (particularly in frozen meat) (OIE 2009). Brucellosis has been found worldwide particularly in the Middle East, Asia, Africa, South and Central America, the Mediterranean Basin and the Caribbean. Brucellaspaces differ in their geographic distribution. B. abortusis found worldwide in cattle-raising regions excluding Japan, Canada, some European countries, Australia, New Zealand and Israel, where it has been controlled (OIE 2018).Infection from a contaminated environment, occupational exposure usually resulting from direct contact with infected animals, and food borne transmission (M.J Corbel, 2006).

In human transmitting of brucellosis from person to person is not usually occurring. However, transmitting by bone marrow transplantation, blood transfusion, sexual intercourse and congenital infections rarely have been documented. Furthermore, infant can be infected through the placenta, ingestion of breast milk, or swallowed secretions while obstetrician (OIE 2018).

Risk assessment

A risk assessment calculate chances of entering the scourge of threatening diseases to importing country endemically and spreads. Although, its result effects on economical, biological and environmental circumstances. The imported livestock production can act as a vector of the disease, which requires research in its solemnity.

1. Release (Entry) Assessment

Most of the developing countries depend upon imported livestock production because their livestock production is not enough when compared with their consumption and their production. Brucellosis can be introduced to the livestock importer countries with either frozen meat or live animals. This is accomplished by false negative tests or weakness in quarantine measures particular in importer countries. Furthermore, semen is considered as the one of most factors that import brucellosis in importer countries as developing countries import semen from developed countries to improve their livestock production.

Therefore, any weakness or negligence in terms of tests or quarantine can lead to increase the likelihood of introducing the disease and occurrence the outbreak. Peoplesin Libya the countryside areas live near their animals and consume their products some times without proper boiling. Also, they are insufficiently educated with hazards of diseases, and they transfer their animals and animals’ products from one area to another without health inspection/certificates of them. Even during the outbreak of the disease from the hazard identification mentioned earlier and epidemiology of brucellosis; it is inferred that brucellosis can be easily introduced and spread.
into susceptible animal, herds, and human population (OIE, 2021).

2. Exposure Assessment

Countries that are negligent, it is necessary health measures for humans and animals before importing animals or livestock production especially meat. It can predict that they will import brucellosis with livestock production from endemic countries. The infection can be spread to humans accidentally (Mukhtar, 2010) and animals or wildlife by direct contact with infected animals as well as contaminated products. In addition, artificial insemination is an important route to transmit the infection rapidly among animals (OIE, 2018).

a. Consequences Assessment

The consequences can be resulted from outbreak of brucellosis are multi-sided such are

i. Causes interruption on trade relations for the exporter country and has a negative impact on livestock productivity and on livestock development in general.

ii. The disease can have a significant impact through its effects on animal and human health.

iii. The disease may affect wildlife, and then it will be a serious problem as it cannot be controlled.

iv. In livestock the disease causes stillbirths, abortions, drop in milk yield and sterility (OIE 2018).

v. Control and prevention measures costs.

vi. Loses in tourism section.

vii. The disease may become endemic and likely occur over time.

viii. Losses from emergency vaccination.

ix. Price effect.

x. Costs of compensation people affected.

All these consequences lead to a huge economic losing that can affect mainly importing countries as well as countries that depend upon exporting livestock production.

Risk Estimation

An estimation of the risk posed by the brucellaSpp depends on the entry, exposure and consequence assessments. As mentioned earlier as points indicate that organisms of brucella are non-negligible, therefore, this disease is potential threat animal and human health in importing countries, therefore, risk management measures must be applied to reduce the level of risk to an acceptable level.

Risk Management

Veterinary authority has to implement strict procedures to reduce the risk of disease occurrence through the steps:

i. Deter both importing livestock production from endemic or enzootic areas and transferring animal and animal production without veterinary surveillance.

ii. Implement strict quarantine measurement strategies for imported animals and livestock products.

iii. Test imported animals, semen, and livestock products before passing them for human consumption or adding them to the herd, or slaughtering positive cases (Mukhtar 2010).

iv. Animals should be imported from Brucellosis-free countries, and vaccination programs should be implemented with infected animals before adding them with the herd (Mukhtar 2010).

v. Effective collaborations between animal health and public health sectors at regional and national levels should be periodically launched for managing the risk factors of the disease (Spickler 2009b).

vi. Imported commodity must have International Veterinary Certificate.

vii. Prevention and controlling programs must be implemented.

Veterinary authority in importer countries have to implement strict procedures to reduce the risk of the disease when it estimated as an high or extreme risk and that can be done through:

a) Deter importing livestock production from endemic or enzootic areas.
b) Implement strict quarantine measurements strategy for imported animals or livestock productions.

c) Test imported animals, livestock production, or semen before passing them for human consumption or before being added to the herd. In addition, slaughtering for positive cases (Mukhtar, 2010).

d) Animal should be imported from Brucellosis-free countries.

e) Vaccination program may be applied before any animals added (Mukhtar, 2010). In fact, the most successful method in prevention and control occurrence of Brucellosis in production animals is through vaccination. Attenuated and live vaccines provide better protection than inactivated vaccines (AUSVETPLAN 2021).

f) Effective collaboration between animal health and public health sectors at regional and national levels, is an important factor for manage the risk (OIE, February 2009) paraphrasing needed.

g) Imported commodity must have International veterinary certificate.

Risk Communication

This process as an exchange of information between importing and exporting countries on risks of the disease and actions proposed to remove or reduce these risks. The exchange of opinions on this matter is an open interactive and transparent. The process of consulting can be done by assessors and those who responsible for risks address in importing and exporting countries.

Conclusion

It is known that every process of imported animals or their products results in a degree of risk and the possibility of transmission of a disease or more of the importing country. The first objective of the risk analysis process is to provide objective logical methodology to assess the risk of diseases associated with the importation of animals and animal products for importing countries. Risk analysis process requires the presence of an expert of epidemiology descriptions of the disease and its characteristics. Based on the results of risk analysis the right decision can be made. In this paper brucellosis is considered as high risk in importing therefore, protecting procedures (Risk Management) should be taken to reduce the risk of brucellosis particularly in importing country.

References


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