Chapter 4
One Health and Parasites

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ABSTRACT

One health is a collective term used to address human and animal health issues under one platform. More than half of the diseases of humans are directly or indirectly related to animal health and spread from animals to humans or vice versa. Etiological agents of zoonotic diseases may be bacterial, viral, or parasitic in origin. Among them, parasitic agents are very important because they are either directly involved as etiological agents or as vectors of other pathogenic organisms. Parasitic zoonoses are transmitted to humans through vectors, food, or drinking water, and thus categorized as vector borne, food borne, and water borne parasitic zoonoses. Food borne and water borne parasitic zoonoses include all those parasitic diseases which are transmitted to humans by consuming contaminated food and water. An extensive alliance is necessary amongst physicians, veterinarians, and public health workers for timely response and approach to guarantee the prevention and management of infections.
INTRODUCTION

One health is a collective term used to address human and animal health issues under one platform. One of the key goals of one health is to link physicians and veterinarians all over the world and work synergistically for resolving the health problems of man and animals. More than half of the diseases of humans are directly or indirectly related to animal health and spread from animals to humans or vice versa, i.e., zoonotic disease. Zoonotic diseases can be classified on the basis of environment and ecosystem in which disease circulate. Zoonotic disease might be synanthropic, where infection spread from livestock to humans or it might be exoanthropic where wild and feral animals are source of infection for humans. Initially, zooanthroponoses and anthropozoonoses were the terms used for disease transmission from humans to animals and animals to humans, respectively. But later on both of these terms were abandoned by an expert committee and the term zoonosis was recommended for diseases transmitted from animals to humans (WHO). Apart from zoonosis, two other terms are also used for transmission of diseases i.e. anthropnoses and sapronoses. Anthroposes is the term used when source of infection is humans while in sapronoses source of infection are abiotic agents i.e. soil, water, decaying plants, corpse etc (Pavlovsk, 1966; Miller et al, 2009).

Number of zoonotic infections increased worldwide in the near past and certain factors are responsible for the emergence of infections. These factors include increase in population, military operations, mass migration of people to natural or man-made disasters, increase in urbanization and inadequate food and water supplies. Similarly, global warming, deforestation, displacement of wildlife results in overflow of infections into domestic animals and humans.

THE LINK IN HUMAN AND ANIMAL HEALTH

There are 1,415 infectious agents and 868 (61%) could be transmitted between animals and humans (Taylor et al, 2001). It has also been found that zoonotic diseases were twice as likely to be associated with emerging or newly discovered infections than nonzoonotic pathogens and that viruses and protozoa (parasites) were the zoonotic pathogens most likely to emerge (Cleaveland et al, 2001). As an academic discipline, comparative medicine or one-health is not a new concept; the first chair in it was established in 1862 in France. The field has an illustrious history. In 1893, Theobald Smith, a physician, and F.L. Kilbourne, a veterinarian, published a paper establishing that an infectious agent, Babesia bigemina, the cause of cattle fever, was transmitted by an arthropod vector. Their seminal work helped set the stage for Walter Reed’s discovery of yellow fever transmission (Wilkinson, 1992).
The Impact of Healthcare Information Technology on Patient Outcomes
www.igi-global.com/article/the-impact-of-healthcare-information-technology-on-patient-outcomes/204408?camid=4v1a