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Statistic research article

Literature analysis of radiological studies on tuberculosis

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Abstract

A statistic analysis based on the available literature was carried out, in order to learn the radiological research tendency and find out the research direction of tuberculosis. A general summary was analyzed, including the literature quantity, the secondary subjects, the literature type, the geographic distributions and journal distributions of literature on tuberculosis imaging. Such prompting statistic would definitely enable revealing the radiological research on the tuberculosis, enrich the corresponding theoretical connotation and guide the clinical practice.

Keywords: Radiology; Tuberculosis; Literature analysis

1. Introduction

Tuberculosis, also called phthisis or phthisis pulmonalis in the past, is a widespread infectious disease caused by various strains of mycobacteria, usually *Mycobacterium tuberculosis* [1]. Tuberculosis is typically prone to attack the lungs, but also be able to affect other parts of the body. It is spread via the air when people who have an active tuberculosis infection transmit respiratory fluids through the air [2]. Latent tuberculosis is common and these infections have no symptoms. However, nearly one in ten latent infections eventually progresses to active disease, resulting in a mortality rate of more than 50%, if left untreated. Till now, tuberculosis remains a major challenge to global public health [2].

The classic symptoms of active tuberculosis infection are a chronic cough with blood-tinged sputum, fever, night sweats, and weight loss [3,4]. Regular diagnosis of active tuberculosis relies on radiology (commonly chest X-rays and computer tomography), as well as microscopic examination and microbiological culture of body fluids [5]. Diagnosis of latent tuberculosis relies on the tuberculin skin test and/or blood tests.

In order to better understand the radiological research status of tuberculosis, and to better guide the research direction, we intensively investigated the previous radiological studies on tuberculosis.

2. Distributions of literature on radiology of tuberculosis

All the available radiological literature related to radiology in the research literature on tuberculosis were retrieved and analyzed. The drawing of literature quantity versus year is shown in Fig. 1. Obviously, from 1911 to 2014, there were about 31,437 papers published on tuberculosis imaging, with a generally wavelike rising tendency year by year. After about 1976, the literature quantity began to increase faster. Till the year of 2014, the annual numbers of papers published on tuberculosis imaging reached to about 1466.

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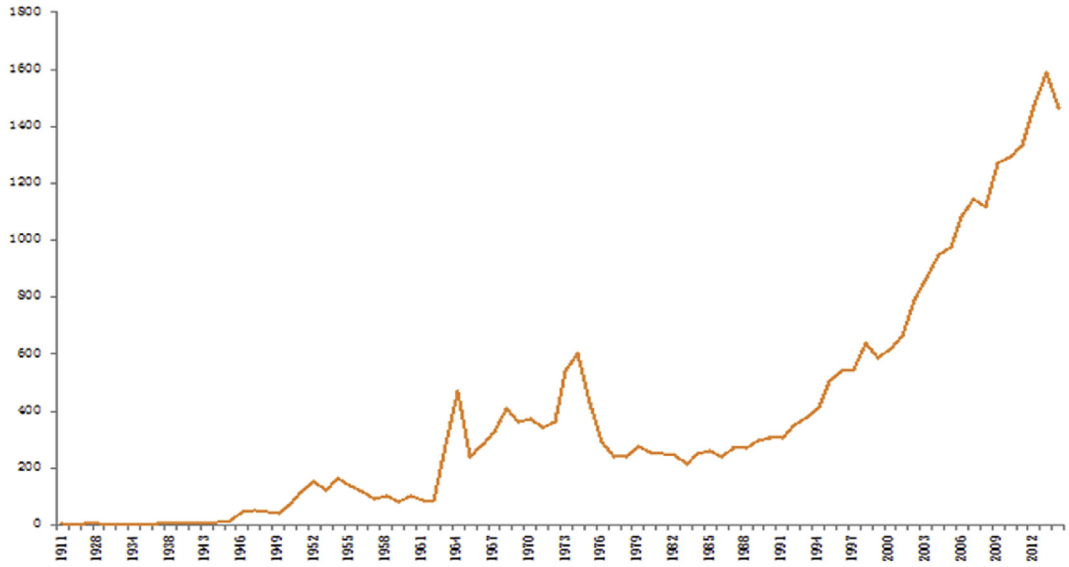

Fig. 1. The quantity of literature on tuberculosis image.

The secondary subjects of the available literature were classified and shown in Fig. 2. It shows that approximately 78.5% of the literature on tuberculosis imaging belong to the subjects of medicine, approximately 4.4% are in the fields of immunology, about 4.1% of healthcare, about 3.7% of biochemistry and molecular biology, and the rest respectively belong to the subjects of pharmacology, neuroscience, physics and so on.

Fig. 3 shows the literature' types. It is shown that about 77.04% are research articles, 8.12% are reviews, 3.81% are letters, and the rest are conference papers, essays, etc.

An overview of the literature' geographic distributions is shown in Fig. 4, and the countries whose numbers of the published literature being the top 20 are listed. Notably, most of the literature (about 12.7%) on tuberculosis imaging

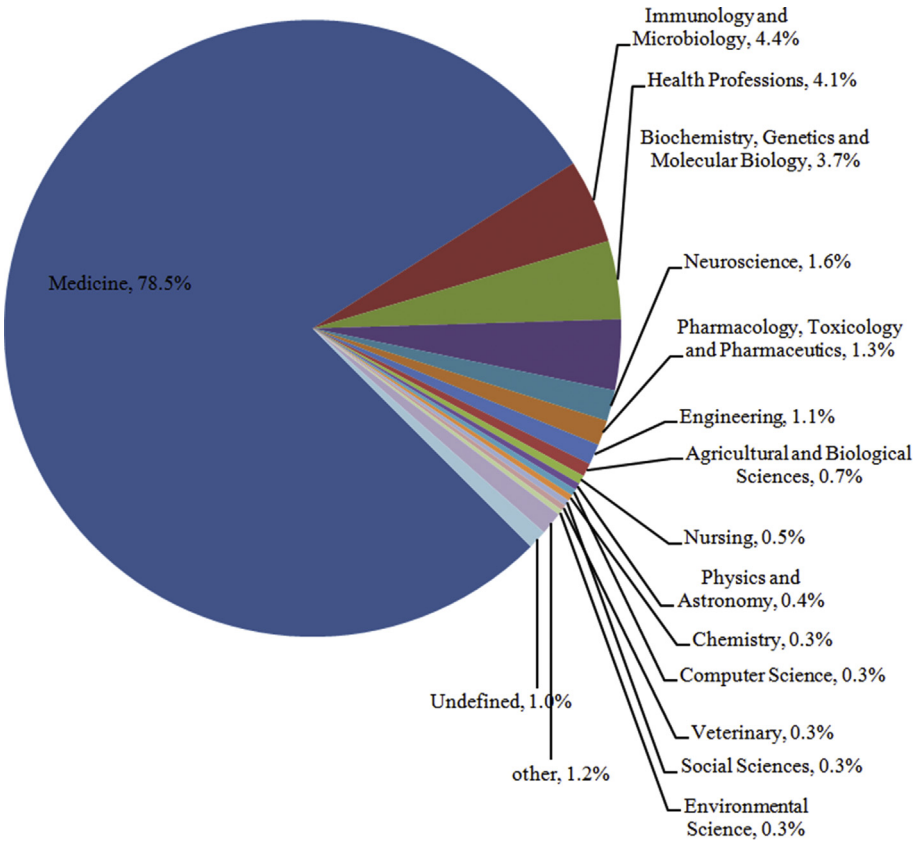

Fig. 2. The secondary subjects of the available literature.