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Incidence, Prevalence and Disease Modifying Effect of Tuberculosis in Rheumatoid Arthritis

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COLUMN ARTICLE

Glossary (World Health Organization, Global Tuberculosis Report 2018 [1]):

- **Incidence:** The number of new and relapse cases of tuberculosis (TB) arising in a given time period, usually 1 year
- **Prevalence:** The number of cases of TB at a given point in a given time
- **Mortality:** The number of deaths caused by TB in a given time period, usually 1 year

Tuberculosis (TB) is one of the top ten leading causes of death worldwide [1].

In 1884 in Hungary the incidence of TB was 466/100.000 [2]. Since BCG vaccination (started in the 1960s) the morbidity and mortality of tuberculosis has decreased considerably in Hungary as well. The incidence of TB sunk below 100/100000 in the 70s, and it was 38/100.000 in 1990 [2]. In the 21th century (2000-2016) a further decline was observed; the incidence fell from 35 to 8.8, and the mortality rate from 4 to less than one per 100.000 populations per year [1].

According to Ferlinz the morbidity of TB in Germany sunk from 320/100000 (1875) to less than 5/100000 until the end of the last century (Ferlinz, 1995, 1999) [3,4] and nowdays (2016) the incidence of TB is 6.7/100.000 [5].

The incidence and mortality of TB is influenced by numerous factors, such as social conditions, compulsory or voluntary screening, vaccination, etc.

The influence of these factors is made evident by the remarkable elevation of incidence of TB during the hunger blockade (1916 - 1918), the inflation period (1923 - 1924) or in the first decade after the second World War in Germany [3,4]. There are also notable differences between indigenous and foreign nationals residing in Germany [5].

For all these reasons it is difficult to assess the risk of tuberculosis in different diseases. There is agreement in the literature that the risk of TB is higher in rheumatoid arthritis (RA) than in the general population [6,7]. Introduction of biological therapy (anti-TNF-α treatment) or disease modifying anti-rheumatic drugs (DMARDs) has generated a new challenge and elevated the risk of TB in RA [6,7].

Coexisting complications or associated diseases modify RA and present atypical clinical manifestations, and

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vice versa, existing RA modifies the clinical symptoms of associated diseases; the clinical signs of exacerbation of an inactive TB, or miliary dissemination of TB may be misleading and TB with or without miliary dissemination may not be diagnosed [8]. The atypical symptoms may lead to incorrect diagnosis or late recognition of the complications or associated diseases. The age of the patients, the autoimmune character of the underlying disease, steroid and/or immunosuppressive treatment and more recently the introduction of disease modifying anti-rheumatic drugs (DMARDs) also play a role in missing the diagnosis of tuberculosis or miliary dissemination of tuberculosis.

All novel clinical or pathological information, which may help to recognize dormant (inactive) tuberculosis and subclinical (atypical) exacerbation of tuberculotic processes in RA or in other autoimmune diseases, should be kept in focus of health policy [9-11].

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