

Abstract

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Title: Diagnostic of syphilis

Bachelor work

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Field of study: Medical laboratory technician, combined study form

Background: The thesis is written in a literary review. The main objective is to summarize knowledge of the diagnosis of syphilis which is caused by a pathogenic bacterium of the genus *Treponema* *Treponema pallidum* subsp. *Pallidum*.

Main findings: *Treponema pallidum* subspecies *pallidum* (*T. p. pallidum*) is the causative agent of syphilis, a sexually transmitted disease affecting more than 12 million people worldwide each year and it can be effectively treated with penicillin. Untreated syphilis has primary (local), secondary (disseminated), and tertiary (chronic) stages, and infection can persist for the lifetime of the patient.

Diagnosis of syphilis is based primarily on indirect diagnostics, it can be divided according to the origin of the antigen non-treponemal (non-specific) and treponemal reactions (specific). Non-treponemal tests detect nonspecific antibody optionally cardiolipin, a phospholipid component constituting the cell membranes. Nonspecific antibodies after the effective treatment disappear over several weeks to months but specific IgG remain detectable for a long time. These reactions can include VDRL (Venereal Diseases Research Laboratory) a RPR (Rapid Plasma Reagin) test.

Treponemal tests detect specific antibodies *T. p. pallidum*. These tests can include eg. TPHA (Treponema Pallidum Hemagglutination), FTA-ABS (Fluorescent Antibody Treponemal - Absorbent) and EIA (Enzyme Immuno Assay) tests.

Conclusions: The inability to culture *T. p. pallidum* in vitro is a major lack of a laboratory diagnosis of syphilis. With the development of molecular biology and diagnostics offers new possibilities.

A fundamental aspect of the diagnosis of syphilis requires interdisciplinary cooperation. Definitive diagnosis can only be made clinician based on history, clinical signs and laboratory tests, which remains irreplaceable.