Data sharing, systematic reviews and meta-analyses

PO - (8421) - LITERATURE REVIEW OF BIOMARKERS FOR HUMAN AFRICAN TRYPANOSOMIASIS POST-TREATMENT FOLLOW-UP

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Introduction

Human African Trypanosomiasis (HAT) is caused by Trypanosoma brucei gambiense and rhodesiense and is transmitted to humans by tsetse flies in sub-Saharan Africa.

To detect the cure or the treatment failure, patients are follow up after treatment integrating the use of biomarkers in blood or cerebrospinal fluid (CSF).

Methods

A Systematic review of the literature according to the PRISMA Statement for Reporting Systematic Reviews was done, focusing on biological markers for HAT post treatment follow-up. Articles were retrieved from PubMed (https://www.ncbi.nlm.nih.gov/pubmed) by using keywords: Human African Trypanosomiasis, Biomarkers, Follow up, Post treatment.

Results

A panel of biomarkers is used to detect relapses or to confirm recovery.

For post-treatment follow up, an examination of the CSF is performed. White blood cell counts in CSF with a defined cut-off value have been proven to be the most accurate to assess the treatment outcome. The intrathecal immunoglobulin M synthesis is specific and sensitive parameter for the detection of CNS involvement in cases of HAT caused by T. brucei gambiense. The decrease of trypanosome specific antibodies concentrations in CSF could be a good parameter for definite cure. High CSF IL-10 levels during treatment follow-up indicate recurring CNS inflammation and treatment failure. An increase of Neopterin in CSF and the presence of trypanosome spliced leader RNA in the blood have a high potential as predictors for treatment failure but need further validation.

Conclusions

New biomarkers for post-treatment follow up in HAT should 1° have high diagnostic specificity and sensitivity; 2° be applicable in field conditions 3° preferentially be performed on blood and thus avoid the painful lumbar puncture during post-treatment control visits; and 4° shorten the follow-up period.