

Title Detection of enterovirus genome in cerebrospinal fluid by gene amplification in meningitis patients

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Aim

According to professionals in the field, detection of enterovirus (EV) genome in cerebrospinal fluid (CSF) by gene amplification has been gradually becoming standard practice in the management of meningitis over the past 10 or so years, especially since ready-to-use kits came onto the market.

With a view to having this diagnostic test reimbursed by National Health Insurance, CNAMTS [National Salaried Workers' Health Insurance Fund] and the French Society for Microbiology agreed on a joint request to the Haute Autorité de Santé for an assessment of this diagnostic tool.

The purpose of this assessment is to make sure that enterovirus genome detection in CSF by gene amplification is a validated diagnostic tool in the management of meningitis cases.

Results

The selected literature is generally of poor methodological quality. It supports EV genome detection by gene amplification in CSF in meningitis because EV-PCR enables:

- 1) diagnosis of meningitis cases that continue to be undetectable using cell culture techniques;
- 2) better patient management through shorter hospital stays and/or antibiotic therapy.

When questioned, the stakeholders were in favour of detection by gene amplification of the EV genome in CSF in suspected cases of meningitis, irrespective of age and season.

The literature analysis and the point of view of the parties concerned coincide.

Conclusions

HAS concludes that enterovirus genome detection by gene amplification in cerebrospinal fluid is a usable diagnostic tool:

- in acute cases of meningitis judged by the clinician, based on the available information, to be of uncertain aetiology (lack of bacterial or viral evidence);

- as a second-line option after direct examination of the CSF and the cytological and biochemical findings;
- with a waiting time for the results, after obtaining CSF samples, of 24 h at best and up to 48 h, the length of the waiting time determining the impact that this examination will have on patient management;
- given that the clinician's decision as to whether or not to suspend the patient's probabilistic treatment and discharge him or her, does not depend exclusively on a positive EV-PCR result but on the sum total of the available information concerning the patient's general state of health and his or her social environment.

Methods

In order to achieve this objective, a literature search was conducted relating to the clinical usefulness and diagnostic performance of this test. The selection criteria used led to the adoption of four professional guidelines and 14 clinical studies. This literature was subjected to critical analysis and the views of the professionals were elicited at a hearing of the stakeholders.

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