National survey of diagnostic services for genital herpes

A M Geretti, D W Brown

Objective: To investigate the provision of diagnostic services for genital herpes simplex virus (HSV) infection in the United Kingdom.

Methods: National survey of laboratories providing diagnostic services for genital herpes.

Results: Completed questionnaires were returned from 25/32 (78%) laboratories participating in the Clinical Virology Network, including seven in London, 12 in the rest of England, one in Wales, four in Scotland, and one in Northern Ireland. Virus culture was the diagnostic method of choice in 20/25 (80%) laboratories; 5/25 (20%) routinely used HSV DNA detection by polymerase chain reaction (PCR). HSV PCR for DNA detection in cerebrospinal fluid (CSF) was available in 17/25 (68%) laboratories. Typing of isolates (HSV-1 or HSV-2) was performed routinely in 22/25 (88%) laboratories. Only 2/25 (8%) laboratories offered HSV type specific serology, although an additional 12/25 (48%) referred requests elsewhere. Consistent with this finding, the number of HSV type specific antibody tests referred to the Health Protection Agency increased by nearly fivefold between 1997 and 2003.

Conclusions: Virus culture remains the preferred diagnostic method for genital herpes, despite evidence indicating that its sensitivity is suboptimal compared to PCR. As HSV PCR is widely available for testing of CSF, it is recommended that clinicians and virologists discuss ways to implement PCR testing of genital swabs, thus enabling greater diagnostic accuracy. A call is made for studies to assess the use of HSV type specific serology in genitourinary medicine (GUM) settings, now that rapid and validated assays have become available and guidelines have been issues to provide recommendations on their use.

Figure 1: Trends in HSV type specific serology test requests referred to the Health Protection Agency between 1997 and 2003.
HSV detection in mucocutaneous swabs, together comprising at least 14 large studies comparing virus culture with PCR for the protocol chosen allows for HSV typing. The adoption of PCR based assays should ensure that the newly diagnosed infection is confirmed. Laboratories currently planning to test for HSV in laboratories that participate in the Clinical Virology Network. The primary aim of the network is to facilitate the provision of a modern and comprehensive virology service across the United Kingdom and the establishment of best laboratory practice. Results showed that virus culture remains the most common diagnostic method for genital herpes, thus confirming the findings of the survey conducted in 1997. Over the last 8 years, there have been at least 14 large studies comparing virus culture with PCR for HSV detection in mucocutaneous swabs, together comprising data from over 3500 patients. Without exception, these studies demonstrated that the sensitivity of virus culture was suboptimal compared to PCR, averaging 70% and ranging between 25% and 89%. Despite the widespread use of HSV PCR for testing of CSF, only a minority of laboratories have adopted PCR for the processing of genital swabs. This implies that approximately one third of symptomatic patients receive a false negative result, preventing appropriate counselling and often triggering additional clinic visits and investigations. The available data provide solid evidence on which to base the recommendation that PCR should replace virus culture as the diagnostic method of choice for genital herpes.

HSV typing was provided by the majority of respondents. There remains room for improvement. Differentiating between HSV types provides important prognostic information in genital herpes and should form an essential component of the initial assessment of all patients with newly diagnosed infection. Laboratories currently planning the adoption of PCR based assays should ensure that the protocol chosen allows for HSV typing.

HSV type specific serology has a modest diagnostic role, although its use has been increasing substantially over the last 6 years. Whereas widespread screening of asymptomatic patients for HSV type specific antibodies is not recommended, current guidelines indicate that testing can be used successfully to diagnose and manage HSV infection in certain groups. These include people with recurrent genital symptoms of unknown aetiology, people with first episode disease including pregnant women to distinguish between newly acquired and recurrent infections, and sexual partners of people with genital herpes where there is a concern about transmission.

In recent years that have been important advances in diagnostic methods for HSV. We hope that the information presented will encourage the implementation of the new techniques, thereby increasing diagnostic accuracy and assisting with effective management.

ACKNOWLEDGEMENTS
We wish to thank the UK Clinical Virology Network for help with the distribution of the questionnaire and wish to acknowledge the contribution of the following Specialist Virology Centres and Units: Aberdeen, Belfast, Birmingham, Bristol, Cambridge, Cardiff, Dundee, Edinburgh, Glasgow, Leeds, Liverpool, London St Bartholomew’s and Royal London; London Royal Free; London University College; London St George’s; London St Thomas’s; London King’s College and Health Protection Agency; London St Mary’s, Chelsea and Westminster, Charing Cross and Hammersmith; Manchester; Newcastle; Oxford; Portsmouth; Reading; Sheffield; Southampton. We also wish to acknowledge the valuable contribution of all other members of the BASHH Specialist Interest Group on Genital Herpes: Dr Simon Barton, Ms Janeickford, Dr Susan Drake, Dr John Green, Dr James Hickling, Dr George Kinghorn, Ms Marian Nicholson, Dr Raj Patel, and Dr Anne Scoular.

CONTRIBUTORS
DB and AMG designed the questionnaire and analysed the data; AMG wrote the first draft of the manuscript; DB reviewed the first draft of the manuscript and contributed to writing the paper in its final form; the BASHH Specialist Interest Group on Genital Herpes reviewed and approved the manuscript.

Authors’ affiliations
A M Geretti, Department of Virology, Royal Free Hospital and Royal Free and University College Medical School, Pond Street, London NW3 2QG, UK
D W Brown, Enteric, Respiratory and Neurological Virus Laboratory, Specialist and Reference Microbiology Division, Health Protection Agency, 61 Colindale Avenue, London NW9 5HT, UK

Competing interest: None.

On behalf of the British Association for Sexual Health and HIV (BASHH) Specialist Interest Group on Genital Herpes, and the UK Clinical Virology Network (CVN).

REFERENCES