Direct immunofluorescence on Tzanck smear for the diagnosis of *Herpes simplex* virus association in pemphigus vulgaris patients

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Learning objectives

1- To demonstrate the possibility of detecting *Herpes simplex* virus (HSV) in PV patients by using Direct Immunofluorescence (DIF) in Tzanck smear samples.
2- To illustrate acantholytic cells and nuclear fluorescence in HSV infection by using DIF in Tzanck smear samples.
3- To diagnose HSV association and to indicate antiviral treatment in PV patients who present refractory response or new lesions on immunosuppressive treatment.

Introduction

Tzanck smear (TS) has been described for acantholytic cells research in the diagnosis of pemphigus vulgaris (PV), but is most commonly used to search multinucleated keratinocytes cells (KC) suggestive of viral inclusion in skin or mucous samples.

Direct immunofluorescence (DIF) has been used in skin smear obtained by TS to allow detection of IgG around KC and/or HSV infection in PV skin or mucous samples.

Introduction

HSV infection has been related as associated to a refractory immunosuppressive treatment or as a trigger factor of PV.

In this study, we describe the role of DIF on TS for the diagnosis of HSV infection in patients with PV.

Methods

- Patients with clinical, histological and serological diagnosis of PV to whom DIF on TS for HSV diagnosis were requested between 2015 and 2016.
- The sample was obtained with wooden spatula from skin or mucous lesions and smears were collected on glass slides.
- For DIF, anti-IgG fluorescein conjugated antibody against HSV1 antigens (Abcam, USA) and anti-human IgG fluorescein conjugated (Sigma-Aldrich, USA) was used for analysis by immunofluorescence microscopy.

Casuistic

Five patients with a mean age of 52 years-old, four females, with negative serology for hepatitis and HIV were included.

Four had PV in activity and were on immunosuppressive treatment.

None had prior diagnosis or treatment for HSV.
Results

DIF for HSV diagnosis resulted positive in four patients:

- in oral mucosa (n = 2)
- conjunctiva (n = 1)
- in buttock erosions samples (1).

DIF for HSV diagnosis resulted negative in a patient with mild lesions on the trunk and was in remission for PV for 10 years.

Discussion

Direct Immunofluorescence for Herpes simplex virus detection on Tzanck’s smear was a useful tool for diagnosis of herpetic infection, allowing early initiation of antiviral therapy, contributing to clinical improvement in PV patients in immunosuppressant treatment that had worsening of symptoms or onset of new lesions.
Conclusion

DIF on Tzanck’s smears for HSV diagnosis can substitute DIF on skin/mucous biopsy.

It is cheaper and more practical, and may be a good laboratorial diagnostic procedure for patients with PV presenting refractory response or new lesions on immunosuppressive therapy.

References


