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**Real-time polymerase chain reaction for *Treponema pallidum*, *Chlamydia trachomatis* L1-L2-L3 and *Haemophilus ducreyi* causing genital and rectal ulcers**

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**Objectives.** Three major diseases characterized by genital or rectal ulcers and caused by bacteria are lymphogranuloma venereum (LGV), syphilis, and chancroid. The aim of this study was to detect *Chlamydia trachomatis* L1-L2-L3 (CT-LGV), *Treponema pallidum* (TP) and *Haemophilus ducreyi* (HD) using a multiplex real-time polymerase chain reaction (real-time PCR) over a 14-month period.

**Methods.** We conducted a retrospective descriptive study including all positive PCR samples for CT-LGV, TP or HD over a 14-month period (from June 2012 to September 2013). Swabs from rectal, genital and pharyngeal ulcers, as well as from inguinal adenopathies were collected from patients with suspected symptomatic sexually transmitted ulcers. Biorobot EZ1® (Quiagen) was used for DNA extraction, whereas SmartCycler® (Cepheid) with the RealCycler THLV® kit (Progenie Molecular) was employed for amplification. Co-infection with *Neisseria gonorrhoeae* (PCR) and HIV (Human Immunodeficiency Virus), as well as syphilis antibodies (VDRL and treponemal IgG and IgM) were also analyzed.

**Results.** A total of 224 samples were analysed. Of these, 70 samples from 62 patients were positive (58 patients had a single positive and 5 patients had two or more positives). 61 (98.4%) patients were men and the average age was 39.8 years. The period from June to September 2013 showed the highest percentage of positive results (40.2%) compared with the previous 12 months (26.5%). DNA from TP was detected in 31 (50%) patients and from CT-LGV in the remaining 31 (50%). No cases of HD were detected. The most frequent diagnosis was proctitis (48.4%), followed by genital ulcer (41.9%), inguinal adenopathy (4.8%) and pharyngeal ulcer (4.8%). TP was more common among genital ulcers (77.4%). In contrast, CT-LGV was diagnosed mainly from rectal samples (83.9%). HIV serology was positive in 80.6% of the patients with TP and in 83.9% of those with CT-LGV. Among patients with syphilis in whom specific antibodies were studied, 73.7% were VDRL positive (range 1/1 to 1/2048), 66.7% treponemal IgM positive and 64.7% treponemal IgG positive. Two patients with CT-LGV proctitis were also PCR positive for *N. gonorrhoeae*.

**Conclusions.** In our hospital HD was not detected during the 14-month study period. TP was the main cause of genital ulcers, whereas CT-LGV was found mostly in proctitis. There was a greater proportion of positive results during the last 4 months of the study. Multiplex real time-PCR is a useful tool for the diagnosis of bacterial genital and rectal ulcers, providing prompt and reliable results.