



ACADEMIA ESPAÑOLA
DE DERMATOLOGÍA
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CASE AND RESEARCH LETTER

Impact of a Training Directed to the Emergency Health Professionals on the Managements of Sexual Transmission Infection Patients

Impacto de la formación dirigida a los profesionales sanitarios de urgencias sobre el manejo de los pacientes con enfermedades de transmisión sexual

To the Editor,

The incidence of sexually transmitted infections (STIs) has increased during the last two decades in Europe.¹ The Costa del Sol Hospital (HCS), located in southern Spain and serving a population of 404,000 inhabitants; has witnessed this increase in STI cases. There were 242 new cases in 2016 and 313 in 2017 including *Herpes simplex virus* (VHS), *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG), and syphilis, in spite of prevention and training campaigns on STIs. STIs are frequent in consultations of the emergency departments (ED)² where they remain frequently undetected due to the lack of symptoms in many affected individuals or the failure to seek routine medical care.³ The medical history of patients with STIs referred to the Dermatology Unit of HCS revealed that the ED clinicians did not ask them about their sexual behaviour, and that their tests and treatments were often inappropriate. Therefore, an improvement of the management of STIs in ED interventions was needed.³ ED staff should be current STIs treatment guidelines described



by the U.S. Center for Disease Control and Prevention (CDC) in their Sexually Transmitted Diseases Treatment Guidelines.

We conducted one-day training sessions on the management of STIs for all emergency health professionals who could attend, and a copy of the presentations and leaflets was provided for all computers in the emergency department. The training consisted of two parts: first, the main symptoms of each STI were explained, and the professionals were briefed on the type as well as the manner of asking questions in order to identify people at risk. The second part was focused on teaching how to choose the proper swab, complementary test, and empiric treatment if needed, in accordance to the CDC guidelines⁴ (Table 1). The briefing was accompanied with an information brochure (Table 2). A total of 301 patients for which urethral and cervical cultures had been performed at the ED of the centre between January 2016 and December 2017 were monitored (Table 3). In order to assess the impact of the training sessions, the medical history of these patients was retrieved in compliance with the Biomedical Research Law. The relevance of these tests was assessed with reference to the symptoms reported in the medical history. The suitability of prescribed empirical treatments and their effectiveness were checked for that both the microbiological isolates and the antibiogram matched the treatment. The statistical significance ($p < 0.05$) of the observed differences between the data from both years, before and after the training, were analysed by means of a Chi-Square (SPSS v.15). Results are summarised in Table 3.

We could note how two training sessions on ED professionals significantly improved the management of STIs in the HCS. Our data show that, before the training sessions, ED professionals omitted asking questions about patients'

Table 1 Relevant points outlined in the STIs brief for professionals of emergency department.

Anamnesis and identification of risky factors	Swab	Recommendations
<ul style="list-style-type: none"> * Symptoms and chronology * Risky factors (e.g. age, same-sex partner, new sexual partners, number of sexual partners) * Risky sexual practices (e.g. non habitual partner, without protection) 	<ul style="list-style-type: none"> * Identification of proper swabs according to presumptive pathology * Identification of suitable diagnostic tests and serology to be requested according to the presumptive diagnosis 	<ul style="list-style-type: none"> * For patients with suspected sexually transmitted infections * For sexual partners * Referral to the Dermatology and Venereology Unit of the Medical Centre if necessary

<https://doi.org/10.1016/j.ad.2022.01.051>

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Table 2 Information on physical examination and choice of suitable diagnostic tests exposed in the examination rooms of the emergency department (brochure). The colours are those swab routinely used in the study hospital. PCR: polymerase chain reaction. Recommendations regarding the choice of the empirical treatment or referral to Dermatology Unit posted in the examination room of the emergency department (brochure).

Physical examination	Cutaneous, inguinal chains, oral mucosa, external genitalia and perianal		
Swab	Exudates		White cap: STUART transport medium Red cap: Gram Yellow cap: swab for PCR <i>Chlamydia trachomatis</i> , <i>Neisseria gonorrhoeae</i> Suspicion HSV: white cap with rose medium culture
	Ulcers		
Serology	Human immunodeficiency virus, Herpes simplex virus (HSV), Hepatitis B virus, Hepatitis C virus; <i>Chlamydia trachomatis</i> ; Syphilis		
Main symptoms	Presumptive diagnosis	Suitable swab	Empiric treatment and quick referral to Dermatology and Venereology Unit
Exudates	<i>Neisseria gonorrhoeae</i>	Gram culture	Ceftriaxone 500 mg (single dose) Azithromycin 1 g orally (single dose) Cefixime 400 mg (single dose) Ciprofloxacin 500 mg (single dose) Doxycycline 100 mg (each 12 h for 7 days) Azithromycin 1 g (single dose)
	<i>Chlamydia trachomatis</i>	PCR	
Ulcers	Syphilis	Dark field	Penicillin (dose related to stage)
	<i>Herpes simplex virus</i>	PCR Tzanck	Valaciclovir 1 g each 12 h (5 or 10 days according to it is the first episode or there is recurrence)
Tumours	Condylomas	∅	Imiquimod 5% (3 times by day, a week) Green tea dry extract (3 times by day during 16 weeks) Podophyllotoxin (2 times by day during 3 days)
	Molluscum	∅	Does not require emergency treatment
	Carcinoma	∅	Does not require emergency treatment

Table 3 Summary of the survey of clinical history of the patients from ED between January 2016 and December 2017. Interview: sexual anamnesis, including questions on sexual behaviour. PCR CT/NG: specific swab for PCR of *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. PCR HSV: specific swab for PCR of *Herpes simplex virus*. S. proper: the use of the proper swab, according to the symptoms reported in the clinical history, was checked. Accurate empirical treatment: the prescription of an accurate empirical treatment was checked in relation to their effectiveness by analyzing both the microbiological isolates and the antibiogram.

Period/variables	2016			2017			p
	January–May	June–December	January–December	January–May	June–December	January–December	
Patients	10/0	22/103	32/103	23/4	35/104	58/108	
Male/female			(Total 135)			(Total 166)	
Interviews made/total patients	0/10	17/125	17/135 (13%)	14/27	26/139	40/166 (24%)	0.017
PCR CT/NG	0/10	8/125	8/135 (6%)	26/27	21/139	47/166 (28%)	<0.001
Test requested/total patients							
PCR HSV	0/10	0/125	0/135 (0%)	4/27	11/139	15/166 (9%)	<0.001
Test requested/total patients							
Proper swab requested/total patients	2/10	20/125	22/135 (16%)	13/27	28/139	41/166 (25%)	>0.05

Table 3 (Continued)

Period/variables	2016			2017			p
	January–May	June–December	January–December	January–May	June–December	January–December	
Serology	1/10	9/125	10/135 (7%)	11/27	13/139	24/166 (14%)	>0.05
Test requested/total patients							
Accurate empirical treatment prescribed/total patients	4/10	27/125	31/135 (23%)	12/27	46/139	58/166 (35%)	0.033

sexual behaviour and did not select a complementary test or treatment corresponding to their clinical suspicion. Similarly to what has been concluded in other works,⁵ the omission of sexual behaviour questions could account for the inappropriate testing⁶ or lack thereof⁷ and treatment of the infections particularly with STIs with symptoms similar to others diseases. After our training there was a global improvement. In 2017 ED professionals collected more information of sexual behaviour in the medical history and at the same time we observed an increase of the use of specific swabs without which certain infections would often remain without diagnosis. In addition some hospitals have set up a contact system for patients with a positive result of NG and CT who have not received proper treatment.⁸ This is implemented in our hospital, also including HVS and HIV. Consequently, the importance of having ED professionals use the proper swabs and request the proper STIs tests, lies in that it makes it possible to efficiently track the patient with these infections and prescribe an accurate treatment. The treatments recommended in the clinical guidelines for the management of STIs are not frequently followed by the emergency physicians.⁵ In our study, an improvement of the prescribed treatments was observed after training reaching a percentage, which fall in to the range reported in the literature. This general positive impact reflected in our results has also been observed in other studies on STI⁹ in other areas, like maternity, where training has been shown to play a crucial role in improving quality of care.¹⁰ In summary, the training has led to a significant improvement in the handling of symptomatic patients with STIs arriving to the ED in our hospital. These results could be consolidated if this procedure could be applied to a broader sample. We are therefore currently working in developing education of particularly exposed groups such as teenagers.

Conflict of interests

The authors declare that they have no conflict of interest.

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