

TO EVALUATE THE RESULTS OBTAINED IN TWO DIFFERENT SHIPMENTS OF THE EXTERNAL QUALITY CONTROL PROGRAM SEIMC (SPANISH SOCIETY OF INFECTIOUS DISEASES AND CLINICAL MICROBIOLOGY) FOR THE IDENTIFICATION AND SUSCEPTIBILITY TESTING OF *Candida dubliniensis*

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Background:

The Spanish Society of Infectious Diseases and Clinical Microbiology (*Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica* [SEIMC]) launched in 1987, and had been sponsoring since then, an external quality control program (Control de Calidad SEIMC [CCS]) covering all fields in clinical microbiology, including Mycology.

The CCS program has a distinctive treat of self assessment and continuous education for the participants. In this way, several activities were designed: a) a general analysis of the results from all the participants, with comments on the main educational conclusions; b) articles of review on the subject of the controls sent along each year, written by specialist in the corresponding field, and published in *Enfermedades Infecciosas y Microbiología Clínica*, the official journal from the SEIMC; c) shipment of the same control strain after a period of time.

Candida dubliniensis is a yeast not easily distinguishable from *Candida albicans* by commercial methods based on biochemical phenotypic reactions. On the other hand, both species of yeast differed in their antimicrobial susceptibility profile, so correct identification would have therapeutic consequences.

Objective:

The aim of this study was to evaluate the improvement in the overall competence and training of the CCS participants in the identification of the same *C. dubliniensis* strain sent in two different shipments separated 5 years one from the other.

Material and methods:

In 2004 and 2009, the same strain of *C. dubliniensis*, typified by a Spanish reference laboratory experienced in Mycology, was shipped to an average of 230 participants (shipments M-2/04 and M-1/09, respectively).

After receiving the results from the participants, an individual certificate was sent to each laboratory, comparing its results in identification and susceptibility testing with the reference and with those from the other participants.

In addition, a general analysis regarding performance of the different identification and susceptibility methods used by the whole group of participants, dealing with the main limitations and pitfalls, was made by the staff of the CCS program after each shipment. This report was e-mailed to the participants, and available at the SEIMC-CCS official web.

Moreover, a review educational article on *C. dubliniensis*, driven by the main conclusions obtained in the general analysis of results, was published in a yearly special number of the official journal of SEIMC.

The results obtained regarding the identification in both controls are compared.

Results:

In spite of the high participation rate in both controls (90.6% and 91.1%, respectively), the percentage of correct identification (*C. dubliniensis*) was only 43.1% in 2004 and 65.3% in 2009. However, a clear improvement was observed along the years (Figure 1).

Most of the unsuccessful identification results were *C. albicans*: 53.1% of participants in M-2/04 and 32.0% in M-1/09 misidentified the yeast with *C. albicans*. This is not surprising, in that both species have similarities in their phenotypes not easily distinguishable with the commercial phenotypic methods.

Most of the participants used commercial biochemical methods for the identification of this yeast (table I). As shown, not all commercial systems performs equally. In almost of cases, the species was misidentified as *C. albicans*.

Tabla I. Identification results with different commercial

Control	Method	% use	% success identification
M-2/04	API 20 C	29,8	44,4
	API id 32 C	21,0	73,7
	Vitek/Vitek 2	18,2	51,5
	Auxacolor	6,6	66,7
	Microscan	3,9	0,0
M-1/09	API 20C	28,0	60,8
	API id 32 C	21,4	61,5
	Vitek/Vitek 2	31,9	93,1
	Auxacolor	7,7	92,9
	Microscan	3,9	14,3

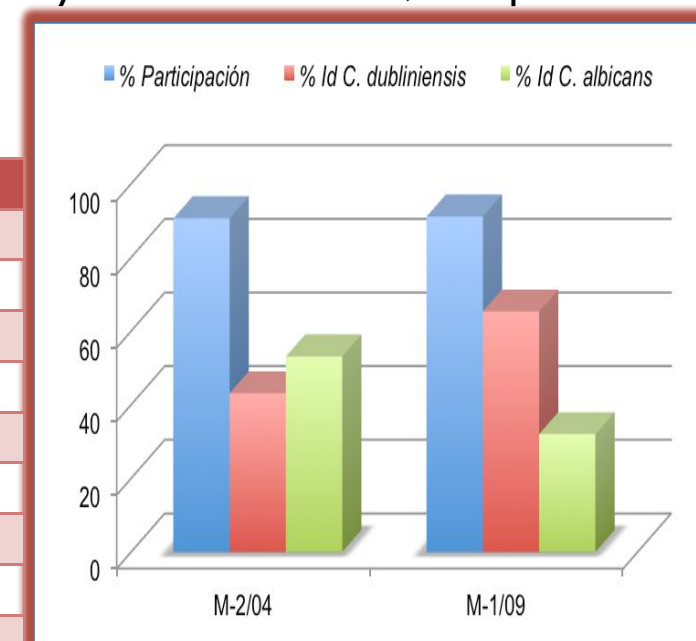


Figure 1. Overall results in the identification of *C. dubliniensis* in two different shipments

Conclusions:

Although the participation rate was high in both controls, the percentages of correct identifications were unsatisfactory. *C. dubliniensis* was easily confused with *C. albicans*. In fact, in the 2004 shipment, the proportion of participants identifying the yeast as *C. albicans* was higher than those with the correct answer.

A significant improvement was noted along the five year period. In addition, better competence would be expected with the progressive incorporation of new molecular technologies in the Spanish clinical laboratories after the last control of this study (2009).

The Program SEIMC External Quality Control may play an important role in improving results in this and in other fields of Clinical Microbiology. Focus in continuous education and training of microbiologists seems a good strategy in the overall improvement.