

Perfect media for isolation of fungi from patients with Dermatophytosis

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الخلاصة:

اختبرت ثلاثة أنواع من الأوساط الزرعية للفطريات وهي (PDA, SDA , CDA) لغرض الكشف عن أفضلها في عزل الفطريات الممرضة للجلد مباشرة من عينات الجلد المصاب بمرض السعفة الجلدية *Tinea* ولخمسة أنواع منها . إن فطريات سعفة القدم *Tinea pedis* فضلت النمو على الأنواع الثلاثة من الأوساط بينما فضلت فطريات سعفة الجسم *Tinea corporis* النمو على وسط PDA وفطريات سعفة المغبن *Tinea cruris* على وسط SDA . كما إن أكثر أنواع الفطريات نموا على الأوساط الزرعية هي *Candida albicans* ويأتي بعدها الفطر *T. mentagrophytes* وأظهرت أوساط PDA , SDA قابلية جيدة لنمو الفطريات المرضية من عينات الجلد مباشرة مقارنة مع الوسط الثالث CDA .

Abstract

Three types of ordinary media were tested in order to assess perfect one for isolation of dermatophytes from patients with dermatophytosis disease .

Tinea pedis was preferred to give a positive growth on all three tested media , whereas *Tinea corporis* was favorable to grow on the PDA and *Tinea cruris* on SDA .

SDA and PDA were appeared as successful media for specimen culturing , in contrast with CDA and *Candida albicanis* was the best fungi species grown on these media , followed by *T. mentagrophytes* .

Introduction

Human skin was infected by different types of pathogenic fungi to cause many disease , Dermatophytosis disease was widely distributed one (1,2,3) that may located between the foot fingers (*Tinea pedis*) , on the glabrous skin (*Tinea corporis*) , between interdigitale (*Tinea cruris*) .

Diagnosis of fungi species was performed by culturing , in addition to direct microscope examination (4) and for this purpose many known media were used today like SDA media (5) .

In this work other known media for fungi culturing were used for the primary isolation of skin scraping and tried to show the most useful one instead of ordinary using in reculturing of fungi after isolation .

Materials and Methods

Skin scraping from fifty – two patients with Dermatophytosis disease was cultured directly on the SDA (Sabouroud's dextrose agar) , PDA (Potato dextrose agar) , CDA (Cornmeal dextrose agar) which prepared as in Emmons (6) after diagnosis as positive infection by direct microscope examination when spores and / or mycelia had been seen.

After sterilization , 0.5 gm of cycloheximid , 0.04 gm of Chloramphenicol were added to each liter of media for preventing of contamination with fungi and Bacteria growth .

Culturing was incubated for 1-4 weeks at 28 ° C for Dermatophytes growing , then diagnosed according to Emmons (6) and *Candida albicans* was appeared during this time of incubation .

Results

From five types of Dermatophytosis infection , *Tinea pedis* showed a great number of positive fungi growth on the three types of media (Table 1) .

Tinea corporis fungi were favorable to grow on the PDA media (Table 1) , where the most species appearance in this type of infection were

Trichophyton mentagrophytes and *Trichophyton tonsurans* (Table 2) .

The fungi of *Tinea capitis* (*Trichophyton verrucosum*) and *Tinea cruris* (*Candida albicans* and *Epidermophyton floccosum*) (Table 2) were preferred to grow well on the SDA media (Table 1) .

Candida albicans was the most fungi isolated from five infected skin infection (55) , then *T. mentagrophytes* (20) (Table 2) .

The most successful media for culturing of skin scraping were SDA and PDA (39 , 40) , especially for the specimen from *Tinea cruris* and *Tinea pedis* infection (Table 1) .

Discussion

In the routine laboratory work , our three tested media were used to grow fungi for a long time and rarely used for direct specimen culturing , except SDA (7) which recorded to become the standard mycology media (5) , although many species of Dermatophytes are not growing well on this type of media (8) .

From the other sides , many other types of media , like PDA and CDA were favorable to culture other species of fungi (8,9) .

SDA and PDA showed a good media for primary isolation of Dermatophytes and *Candida albicans* species , whereas , Cornmeal agar was revealed a weak media , in contrast with the above types which may be resulted from the kind of amino acids they have (8) when compared with other media content , peptone in SDA (10) and useful amino acids in PDA (9) .

Candida albicans was one of the systemic infected fungi in human (6) and contaminated with other fungi infection , especially Dermatophytes (5) which give reason for their occurrence in most scraping specimens (Table 2) .

From the above results it can be concluded that SDA and PDA were the perfect media for primary isolation of skin infection fungi (dermatophytes and *Candida albicans*) .

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Table (1) : No. of dermatophytosis patients , with a positive growing on the three tested media .

Dermatophytosis	Total No.	SDA	PDA	CDA
Tinea capitis	4	3	2	1
Tinea cruris	13	12	8	6
Tinea corporis	17	7	13	7
Tinea pedis	17	16	16	14
Tinea unguium	1	1	1	1
Total No.	52	39	40	29

Table (2) : No. of positive fungi species growth from five Dermatophytosis disease on the three tested media .

Dermatophytosis	Media type	<i>C</i>	<i>T. m</i>	<i>T.v</i>	<i>E. f</i>	<i>T.t</i>	<i>T.r</i>
Tinea capitis	SDA			5			
	PDA	1		2			
	CDA			1			
Tinea cruris	SDA	5	1		4		1
	PDA	4	1		2		1
	CDA	1			4		1
Tinea corporis	SDA		1			4	
	PDA	1	7			3	
	CDA		4			3	
Tinea pedis	SDA	14	3		1		
	PDA	14	1		1		
	CDA	13	1				
Tinea unguium	SDA	1					
	PDA		1				
	CDA	1					
Total No.		55	20	8	12	10	3

C : *Candida albicans* , *T.m* : *T. mentagrophyton* ,
E.f : *Epidermophyton floccosum* , *T. v* : *T. verrucosum* ,
T. t : *T. tonsurance* , *T.r* : *T. rubrum*