

Clostridium difficile

(2004/ 10/ 23 2004/ 7/ 7)

Clostridium difficile

12-5

% 17.3 52

% 68 % 32

24-18

6 –

Isolation and Identification of *Clostridium Difficile* from Patients with Colitis and Diarrhoe in Ninevah Governorate

Amera M. Al-Rawi
Department of Biology
College of Science
Mosul University

ABSTRACT

We report the isolation and identification of *Clostridium difficile* from infants having watery diarrhoe at ages from after birth to 2 years old during the period from 5 to 12 days according to the clinical diagnosis and from colitis and diarrhoeal cases caused

by using antibiotics. Morphological and biochemical tests were used for the identification of this bacterium .

The isolation percent from infantile watery diarrhea was 17.3 % while it form 32 % and 68 % from diarrhea and colitis cases in adult respectively. In studying the effect of age on its isolation percent from infantile diarrhea, it was found that this percent increased with age it formed higher isolation percentage in 18-24 month ages while it could not be isolated from after birth to 6 months infants.

1935 *Cl.difficile*

(AAD) Pseudomembranous colitis (PMC)
 Associated Diarrhea- Antibiotic
 . (Kelly et al., 1994 ; DeLalla et al.,1992)

Brooks) % 10-2 *Cl. difficile*
 % 5-3 (et al.,1998

% 33 – 11 Colitis % 75-60
 .(McFarland et al, 1989 ; Nolan et al., 1987) AAD
 PMC
 %10 PMC Lincomycin Clindamycin
 .(Mangioni , et al., 1991)

(McFarland et al,1989 ;
 (Ubiquitous) (Koneman et al.,1997) .Pothoulakis ,2002)

strictly *Cl. difficile*
 anaerobic
 48

Koneman et al.,1997 ; Fekety) Cefoxitin Cycloserin
 (and Shah, 1993
 D1 A Enterotoxin

1981 Taylor
 B (Rabbit ileal loop test)
 Cytotoxin D₂
 (% 75) (Bartlett,1994)
 .(Lyerly,1995 ; Bartlett,1990)
 (Motility-
 B A altering Factor)
 . (Lyerly,1995)

52 •
 Rectal swab 65 •
 12-5 •

Oxoid (CCFA) Cycloserine-Cefaloxitine Fructose Agar .1
 . % 5

5 Agar 40 Trypticase Soy Agar : .2
³ 1000 400 L-Cystein 5 Hemin 5
 % 5 50

:

. (Koneman et al., 1997)

% 5

CCFA

37

48-24

. (Fedorko and Williams , 1997)

Alcohol-

³

1)

Spore-Selection

³ 0.1

30 (

. (Koneman et al., 1997)

:

: .1

: (Koneman et al., 1997)

: .2

: *

(5) NaCl (10) Tryptose

: *

(1)

(5) Agar (1)

*

CCFA

Horse-stable

CCFA

(Non hemolytic)

. 2 1

(1)

(3)

. (4)

. (Koneman et al., 1997)

Clostridium difficile : 2

Clostridium difficile : 3

Clostridium difficile : 4

.Cl. difficile : 1

+	
+	
-	
+	
+	
-	
+	
+	
+	

% 17.3 (2)
 (25) % 38.4 (52)
 (17) % 68 (8) % 32

: 2

17.3	9		52
32	8		65
68	17		

10 -5%

Cl. difficile

B A

. (Knoop et al., 1993 ; Mulligan , 1984)

% 30-20 1996 Plum Benenett

6

Cl. difficile

2002 Pathoulakis

Ampicillin, Amoxicillin,

9-4

.Clindamycin Cephalosporins

(3)

6 -

% 66.7

24-18

Protective flora

(Riley , 1984)

. (Bennett and Plum , 1996 ; deLalla et al., 1992)

: 3

-	0	6 -
11.1	1	12 - 6
22.2	2	18 - 12
66.7	6	24 - 18
100	9	

Bartlett, J.G., 1990. *Clostridium difficile*. Clinical Considerations. Rev. Infect. Dis. 12: pp.243-251 .

Bartlett, J.G., 1994. *Clostridium difficile*. History of its role as an euteric pathogen and the current state of knowledge about the organism. Clin. Infect. Dis. 18 : pp.5265-272.

Bennett, J.C. and plum, M.D., 1996. Text book of Medicine. 20th ed volume 2. W.B. Saunders company. pp.1633-1635.

Brooks, G.F., Butel, J.S. and Morse, S.A., 1998. Jawetz, Melnik and Adelberg's Medical Microbiology . 21th ed. Appetton and Lange, California .

DeLalla, F., Nicolin and Rinaldi, R.E., 1992. Prospective study of oral teicopli versus vancomycin for therapy of pseudomembranous colitis and *Clostridium difficile* associated diarrhea. Antimicrobial. Agents . Chemother . 36 : pp.2192-2199 .

Fedorko, Dp. and Williams, E.C., 1997. Use of Cycloserine – Cefaloxitine – Fructose agar in the rapid identification of *Clostridium difficile*. J. Clin. Microbiol. 35 : pp.1258-1259.

Fekety, R. and Shah, A.B., 1993. Diagnosis and treatment of *Clostridium difficile* colitis . JAMA, 269 : pp.71-75 .

Kelly, Cp., Pothoulakis, C. and Lamont, J.T., 1994. *Clostridium difficile* colitis. N. Eng. J. Med. 330 : pp.257-262 .

Knoop, F.C., Owens, M. and Crocker, C., 1993. *Clostridium difficile* clinical diseases and diagnosis . Clin.Microbiol. Rev. 6 : pp.251-265.

Koneman, E.W., Allen, S.D., Janada, W.M., Schreckenberger, P.C. and Winn, W.C., 1997. Color Atlas and Textbook of Diagnostic Microbiology 5th ed. Lippincott – Raven publ . philadelphia . USA. pp .773-774.

Lyerly, D.M., 1995. *Clostridium difficile*. Testing. Clin Microbiol. Newslett .17:pp.17-23

Mangioni, C., Bianchi, L. and Bolis, P., 1991. Multicenter trial of prophylaxis with clindamycin plus Cefotaxime in gynecologic surgery . Rev. Infect. Dis. 13 : pp.621-625 .

McFarland, L.V., Mulligan, M.E. and Kwork, R.Y.Y., 1989. Nosocomial acquisition of *Clostridium difficile* infections . N. Engl. J. Med. 326 : pp.204-210 .

McFarland, L.V. and Stamm, W.E., 1986. Review of *Clostridium difficile* associated dieases . Am. J. Infect. Control. 14 : pp.94-109 .

- Mulligan, M.E., 1984. Epidemiology of *Clostridium difficile* induced intestinal disease . Rev. Infect. Dis. 6 : pp.5222-5228 .
- Nolan, N.P., Kelly, C.P. and Humphreys, J.F., 1987. An epidemic of pseudomembranous colitis importance of person to person spread. Gut 28 : pp.1467-1473 .
- Pothoulakis, C.M.D., 2002. *Clostridium difficile* infections. Article Harvard Medical School. pp.28-47.
- Riley, T.V., 1984. The epidemiology of *Clostridium difficile* associated diarrhea. Rev. Med. Microbiol. 5 : pp.117-122 .
- Taylor, N.S., Thorne, G.M. and Bartlett, J.G., 1981. Comparison of two toxins produced by *Clostridium difficile*. Infect. Immun . 34 : pp.1036-1043.