大韓微生物學會誌：第11卷 第1號 1976
J. Kor. Soc. Microbiol., Vol. 11, No. 1, 1976

A Report on the Shigella Cultures Isolated in Korea (1975)

Soon-hit Kim, B.S., **Nam-Ho Chun**, M.D. and **Younghat Ryu**, M.D.

Department of Microbiology, National Institute of Health, Korea

=國文抄錄=

1975年度 韓國에서 分離된 痢疾菌에 關한 報告

國立保健硏究院・微生物部

金舜姬・全南昊・柳榮海

1975年度 1年間 2033주의 장내병원성세균이 각 시, 도, 위생시험소 및 종합병원등에서 수집되어 검사대상이 되었으며 16주의 전형적인 이질균을 동정확인하였기에 미생물학적 성상을 보고하는 바이다. 수집된 지역적분포 사항은 Table 1 과 같고 3 group 으로, 6종류의 serotype 으로 확인되었다. 생물학적 성상실험들은 미국 Center for Disease Control 에서 발표된것과 비슷하였다.

우리나라에서 흔히 상용될 수 있는 항생제에 대한 감수성 검사를 실시하였으며 그 반응의 pattern 은 표 3 (Table 3)에서 보시는바와 같고 이 결과는 에년과 마찬가지로 Ericsson 씨 법에 의해 관찰된 것이었다.

INTRODUCTION

The authors identified sixteen cultures of Shigella among 2033 suspectable enteric pathogens collected and sent by the eleven provincial & city health laboratories and hospital laboratories in order to be bacteriologically confirmed in the National Institute of Health, Korea in 1975.

Table 1. Number of Shigella cultures identified in 1975 according to the serotypes and geographical distribution

Areas	No. of cultures identified	Serotypes					
		A_2	B_{1b}	B_{2a}	B_x	$D_{1,2}$	D_2
Chungbuk	1			1			
Cheonbuk	4	3					1
Kyungbuk	1			1			
Kangwon	10		6	1	1	2	
Total	16	3	6	3	1	2	1

The cotent of this report was presented at 37th academic meeting of the Korean Society for microbiology held on May 1, 1976.

Of the sexteen cultures three belonged to the subgroup A, ten to the subgroup B, and the rest to

Table 2. The physicochemical properties of Shigella cultures identified in 1975

Serotypes	Shigella	A_2	B_{1b}	B_{2a}	B_x	$D_{1\cdot2}$
Sing / Substrate	Sign	+/−	+/−	+/−	+/−	+/−
Hydrogen sulfide	−	0/3	0/6	0/3	0/1	0/3
Urease	−	0/3	0/6	0/3	0/1	0/3
Indol	−or+	3/0	0/6	0/3	1/0	0/3
Methyl red	+	3/0	6/0	3/0	1/0	3/0
Voges-Droskauer	−	0/3	0/6	0/3	0/1	0/3
Citrate(simmons')	−	0/3	0/6	0/3	0/1	0/3
K C N	−	0/3	0/6	0/3	0/1	0/3
Motility	−	0/3	0/6	0/3	0/1	0/3
Lysine decarboxylase	−	0/3	0/6	0/3	0/1	0/3
Arginine dihydrolase	d	0/3	0/6	0/3	0/1	0/3
Ornithine decarboxylase	d	0/3	0/6	0/3	0/1	3/0
Phenylalanine deaminase	−	0/3	0/6	0/3	0/1	0/3
Glucose acid	+	3/0	6/0	3/0	1/0	3/0
gas	−	0/3	0/6	0/3	0/1	0/3
Lactose	d	0/ε	0/6	0/3	0/1	(1)/2
Sucrose	d	0/3	0/6	0/3	(1)/0	0/3
Mannitol	+or−	0/3	6/0	3/0	1/0	3/0
Dulcitol	d	0/3	1/5	0/3	0/1	0/3
Salicin	−	0/3	0/6	0/3	0/1	0/3
Adonitol	−	0/3	0/6	0/3	0/1	0/3
Inositol	−	0/3	0/6	0/3	0/1	0/3
Sorbitol	d	0/3	1/5	0/3	1/0	0/3
Arabinose	d	0/3	1/5	1/2	1/0	3/0
Raffinose	d	0/3	0/6	1/2	1/0	0/3
Rhamnose	d	3/0	(1)/5	0/3	0/1	3/0
Malonate	−	0/3	0/6	0/3	0/1	0/3
Christensen's citrate	−	0/3	0/6	0/3	0/1	0/3
Sodium alginate	−	0/3	0/6	0/3	0/1	0/3
Fructose	+	3/0	6/0	3/0	1/0	3/0
Xylose	d	0/3	1/5	0/3	0/1	0/3
Trehalose	d	3/0	6/0	3/0	1/0	3/0
Cellobiose	−	0/3	0/6	0/3	0/1	0/1
Esculin	−	0/3	0/6	0/3	0/1	0/1
Nitrate to nitrite	+	3/0	6/0	3/0	1/0	1/0
Oxidation-fermentation	F	3F	6F	3F	1F	1F
Oxidase	−	0/3	0/6	0/3	0/1	0/1

( ) : delayed reactions (three or more days)

Table 3. The sensitivity of Shigella cultures to the antibiotics tested in 1975.

Serotypes	A_2				B_{1b}				B_{2a}				B_x				$D_{1,2}$				D_2			
Susceptibility	R	MR	MS	S	R	MR	MS	S	R	MR	MS	S	R	MR	MS	S	R	MR	MS	S	R	MR	MS	S
Nitrofurantoin				3				5				1				1				2				1
Penicillin G 1.0μg			3				5				1				1				2				1	
Ampicillin			3		1		4				1				1				2				1	
Kanadmycin			1	2			4	1			1					1				2				1
Streptomycin			1	2			5				1				1				2				1	
Gentamycin			3			3	1	1			1				1				2				1	
Colistin	3				5				1				1				2				1			
Bacitracin	3				5				1				1				2				1			
Lincomycin	3				5				1				1				2				1			
Penicillin V 10μg	3				5				1				1				2				1			
Pethicillin	3				5				1				1				2				1			
Erythromycin	3				2	3				1				1			2				1			
Oxytetracycline		2	1		4		1		1				1				2						1	
Sulfaisodimidine 0.25		1		2	5				1				1				2				1			
Sulfaisodimidine 2.5		2	1		5				1				1				2				1			
Cefalosporin			3			3	2			1					1			1	1				1	
Neomycin	1	2				4		1		1				1			1			1		1		
Penicillin G 10μp			3			1	4				1				1				2			1		
Chloramphenicol				3	5				1							1	2						1	
Tetracycline				3	4			1	1						1		1	1						1
Doxycycline			2	1	3	1	1			1						1	2					1		

R : resistant
MR : moderate resistant
S : sensitive
MS : moderate sensitive

the subgroup D, and non of cultures belonging to the subgroup C was observed as well as in previous years.

The geographical distribution was analyzed, and the biochemical and serological properties of the finally identified cultures were tabulated in addition to the results summarized from the antibiotics sensitivity tests in this report.

METHODS

All cultures were tested according to the manual published by USCDC.

The sensitivity of the cultures to antimicrobial drugs were observed by means of Ericson's disc methods using nineteen kinds of drugs.

RESULTS

1) Sixteen cultures of Shigella were identified by the National Institute of Health, Korea, among 2033 suspectable cultures isolated in 1975.

2) Of sixteen Shigella cultures confirmed one culture was from Chungchungbuk-Do, four cultures from Chonlabuk-Do one culture from Kyungsangbuk-Do and ten cultures from Kangwon-Do.

3) The results of the physicochemical tests of the identified Shigella cultures were summarized in table 2. The serological analyses of sixteen Shigella cultures showed A_2, B_{1b}, A_{2a}, B_x, $D_{1,2}$ and D_2 as listed in Table 1.

4) All the cultures showed almost sensitive to Nitrofurantoin, Penicillin G 1.0 ug, Kanamycin, Ampicillin, Gentamycin and Streptomycin but resistant to Cilistin, Bacitracin, Lincomycin, Penicillin V 10ug, Methicillin, Erythromycin, Oxytetracycline and Sulfaisodimidine.

SUMMARY

The authors identified sixteen Shigella cultures, which were three cultures of subgroup A, ten cultures of subgroup B, three cultures of subgroup D and none of cultures belnoging to the subgroup C was detected as it was in previous year.

REFERENCES

1) Edwards, S.G & W.H. Ewing: *Identification of Enterobacteriaceae, 3rd Ed., Burgess publishing Co., 1972.*

2) Cowan, S.T. and K.J. Steel: *Manual for the Identification of Medical Bacteria, Cambridge University Press, London, 1966.*

3) Ericsson, H: *Rational Use of Antibiotics in Hospitals, Scandinavian Jornal of Clinical Laboratory Investigation, 12, Suppl. 50, 1960.*