

사람에서의 세균성 인수전염병 발생현황 : 우리나라의 현황

Trends of Bacterial Zoonoses in Humans in Korea

221

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Abstract

Of 60 national communicable diseases in Korea, 23 are zoonoses, diseases transmissible from animals to humans. Among the bacterial zoonoses, plague, brucellosis, anthrax, Q fever, tularemia, glanders, and melioidosis are categorized as a high - level threat of bioterrorism and biowarfare in the world. In this paper, the trends of notifiable bacterial zoonoses recently occurring or recurring in Korea and other potential pathogens for bioterrorism or biowarfare are reviewed. Notifiable bacterial zoonoses recently occurring in Korea are enterohemorrhagic *Escherichia coli*(EHEC) infection, tetanus, tuberculosis, scrub typhus, leptospirosis, brucellosis, and anthrax. Other bacterial diseases recently emerging are tularemia, ehrlichiosis, and Q fever. However, no human case of plague, glanders, and melioidosis has been reported yet.

Keywords : **Zoonosis; Bacterial zoonoses;**
Notifiable communicable disease;
Emerging infectious disease

: () ; ;
; () ;

20⁰⁰ 60 23
(1, 2). 1
, 2 , 3
, , 가 ,
, , , 4
(, ,),
, vacomycin resistant
Staphylococcus aureus(VRSA) ,
, ,
(1, 2).
, , ,
, , (melioidosis),
, , , , Q , ()
(2, 3).
(emerging infectious disease, EIDs)
가 .

(4, 5). CDC
3

. A , , , , , 1665 , 1894 - , 1961
(Ebola, Marburg, Lassa, (7).
Machupo viruses) , B , ,
C. perfringens ϵ -toxin, , , Q (가), (,), ,
, , ; (*E. coli* . WHO
O157:H7, *Shigella* spp.,) 1999 304
(, *Cryptosporidium parvum*) 2002 4 , 71 (,
, C (Nipah virus 60%)가 .
Hantavirus) (4, 5). . 1347 , 1710
가 , 1767
 , 1940
가 (4, 7).

가 .

Lyme

2)

(EHEC Infection)

(HS/HL enterotoxin)

ETEC, verotoxin

Shiga-like toxin

EHEC,

EPEC가

EHEC

1. 1

1) (Plague)

(*Yersinia pestis*)

()

(O157:H7)

1982

. EHEC

. (, gerbils, moles, skunks), , , ,

, , , , 가 , 가 () , 가 10%

(*Xenopsylla*

cheopis)

EHEC

1998

(6).

7

EHEC(O157:H7)가

6

, 14

-

(8).

EHEC

(1998~2002)

* () outbreaks / OUT ; 0 group untypable

(2003. 6~2004. 7)

EHEC ; enterohemorrhagic *E. coli*, ETEC ; enterotoxigenic *E. coli*, EPEC ; enteropathogenic *E. coli*

(9). WHO

3. 20 (1984~2004)															
1984	85	86	87	88	89~91	92	93	94~97	98	99	2000	001	002	003	004
5	5	2	3	5	-	1	3	-	3	4	16	8	4	8	7*

*Cumulative total by July, 2004

4. (2001~2004)										
(<)										
	(%)*	(%)	< 9	19	29	39	49	59	< 69	> 70
2001	37,268 (78.7)	11,805 (24.9)	216 (3.2)	2,906 (3.2)	8,459 (103.8)	6,188 (72.5)	5,511 (75.4)	4,183 (94.5)	4,927 (148.2)	4,878 (230.8)
2002	34,967 (73.4)	11,345 (23.8)	165 (2.5)	165 (35.8)	7,603 (94.3)	5,819 (67.9)	5,295 (69.7)	9,969 (87.5)	4,827 (140.3)	4,911 (219.4)
2003	33,829 (70.6)	10,976 (22.9)	200 (3.1)	2,280 (34.7)	7,172 (90.2)	5,533 (64.6)	5,252 (66.7)	3,772 (80.7)	4,603 (130.5)	5,017 (211.6)
2004**	18,248	2,833	97	1,332	3,746	3,108	2,709	2,040	2,347	8,869

* (%) rate/100,000

** Notified tuberculosis cases by July 2004

1 가 20~50%가 가 .

3 20 , , , . MAI ,

16 , MAI

(70.6%) 50 (82.3%),

(10).

() .

DPT . MAI

AIDS

3. 3 .

1) (Tuberculosis) 2001 ~ 2003

(*Mycobacterium tuberculosis*), 33,829 ~ 37,268 100,000 70.6 ~

(*M. bovis*) *M. avium* - *intracellulare*(MAI) 78.7 .

100,000 22.9 ~ 24.9 가

60

20 ~ 29 BCG

(11).

			5.	14	(1990~2004)									
1990	91	92	93	94	95	96	97	98	99	2000	2001	2002	2003	2004
20	6	1	11	9	14	3	11	28	33	45	16	9	10	2*

* Cumulative total by July, 2004

3) 가
(Scrub typhus/ Tsutsugamushi disease)
가 (*Orientia tsutsugamushi*)
. Rhesus , , ,
*M. bovis*가 . , , , 가 .
가 ,
2) (Endemic or Murine typhus)
(*Rickettsia typhi*) 가
. 가 , , 50~80% (15).
(opossum), , , 가
(*Polyplax spinu-*
losus) . 1
, . (*Leptotrombidium*
scutellare, *L. pallidum*, *L. zetum*, *L. orientale*, *L. pal-*
(60~80%) *pale*) (tsutsugamushi, chiggers,
(13). , red mite)
, , , ,
. -
1959 ,
1962
(14). 1960~1989 . (, , ,),
가 . 가(, , ,), (,
5 1990 20 가),
1~45 가 1951 6
. 가 1957 ,
(*Microtus fortis*, *M. minutus*) (*L. pal-*

6.		20		가		(1985~2004)					
1981	-	1985	34	1989	965	1993	2,321	1997	277	2001	2,662
1982	-	1986	353	1990	956	1994	1,185	1998	1,140	2002	1,919
1983	-	1987	491	1991	2,166	1995	274	1999	1,342	2003	1,140
1984	-	1988	669	1992	2,473	1996	263	2000	1,399	2004	30*

* Cumulative total by July, 2004

7.			20		(1985–2004)			
(%)					(%)		(%)	
1981	-	-	1989	47	0	1997	4	-
1982	Several	-	1990	140	4(2.9)	1998	90	-
1983	Several	-	1991	25	1(4.0)	1999	130	-
1984	Several	-	1992	13	-	2000	8	-
1985	-	-	1993	4	-	2001	133	-
1986	-	-	1994	7	-	2002	122	-
1987	500	8(1.6)	1995	13	-	2003	121	-
1988	49	-	1996	6	-	2004	11*	-

* Cumulative total by July, 2004

lidum, *L. scutellare*)*Leptospira interrogans* serovar canicola 1942

Gilliam, Karp, Boryung,

Sekikuchi

Yoncheon (16).

(17). 1981

9 ~ 12 11

40 가 1982

1952 ~ 1984 32

가

1985 34 가

, ,

30 ~ 2,600 가

, , 1987

(6).

500 가 1986

Leptospira interrogans serovar

4) (Leptospirosis)

icterohaemorrhagiae 가

(Leptospira interrogans)

(Weil's diseases) (18).

() . (

)

Lai (90.2%)

canicola

(5.8%) . 1991

8.		(1952~2000)	
		()	()
1952	,	14(14)	3(3)
1962	,	20(20)	2(2)
1964	, ,	37(37)	59(3)
1968	,	1(1)	10(2)
1992	,	-	13(0)
1994	,	1(1)	28(3)
1995	,	- (0)	2(1)
2000	,	2(2)	5(2)
		75(75)	122(16)

from Choi CS. Anthrax. Zoonoses. 1st ed. Seoul : Seoheumg Publ., 2002 : 52 - 9

(18R) (HM3) . 2 1915
 . (, ,) , 1978
 51 ,
 가 , 10 (64.7%) 가 1980 ,
 , 9 (15.7%), 11 8 (9.8%) 1990 Aum ,
 . 1990 ‘ ’ 2001 () .
 . 1907 ~ 1978 72
 130 (19). 1952
 (7).
 3 . 8
 5) (Anthrax) 1952 ~ 2000 8
 (,) 122
 (16 (13.1%) (2). 1995
), () () ,
 . , 2
 1 1
 (100%) (25 ~ 60%) . PA
 . (1 : 10,000)가
 , .

1997 1 4 .

가 . *Francisella tularensis*가

가

() ,

()가 .

가 (: 2) (Ehrlichiosis)

(Ehrlichia canis, E. phagocy-

tophila E. sennetsu) (, ,

)

(human monocytic ehrlichiosis, HME,

E. chaffeensis) (Dermacentor)

(Amblyomma americanum)

(HGE, E. equi)

(I. scapularis) (Dermacentor)

(23). HME

RMSF (,

), , ,

가, (morulae)

()

. HGE

HME .

HME 2000 8

9 20

11 , , , ,

1996 12 26

40 가

가

(22).

(24).

E. chaffeensis

IgM (1:256)가 .

9.		()		(1994~1999)			
1994		1996		1998		1999	
Salmonella	37 635(42.2)	23 1,180(53.3)	28 928	44 2,840(36.6)			
	10 38	10 342	18 1,420(31.0)	9 690			
	13 256	10 273	34 1,376	48 1,523(19.6)			
	12 172	13 417	- -	5 347			
	6 3	1 3	1 5	1 10			
	23 241	21 461	38 848	61 2,209(28.5)			
(100%)	102 1,746	78 2,676	119 4,577	174 7,764			

from Choi CS. Salmonellosis. Zoonoses. 1st ed. Seoul : Seoheung Publ., 2002 : 101 - 6

(28). 1993

(*I. scapularis*) (*D. vari-* *Coxiella burnetii*가 ,

abilis)가 . 가

가 . Q

가 .

3) Q (Q fever)

Q (*Coxiella burnetii*) 4) (Salmonellosis)

. 가 (, ,) Salmonella *Salmonella* spp.

. , (29). *Salmonella* *E. coli*

, , , , O157:H7, *Shigella* spp. *S. aureus*

(25).

, , . Q (4).

(26, 27). 9 1994 ~ 1999

Q salmonella 36.6 ~

(27). 53.3% 가 . CDC

2003 15,600

(5). *Salmonella* 6,017(38.5%), *Campylo-*

1992 ~ 1993 *bacter* 5,215(33.4%), *Shigella* 3,021 (19.3%) , *Cryp-*

, , 가 Q *tosporidium* 480(3.1%) , *E. coli* O157 443(2.8%),

10.		Salmonella		(1993~1994)	
/				(%)	
<i>S. Eteritidis</i>	366(33.7)	3	7	3	
<i>S. Typhi</i>	181(16.6)	211(87.0)	-	10	
<i>S. Typhimurium</i>	375(34.5)	16(6.3)	8	4	
<i>S. Paratyphi A</i>	9	6(2.3)	-	4	
<i>S. hadar</i>	20(1.8)	1	-	-	379(27.4)
<i>S. stanley</i>	18	-	-	-	412(29.8)
<i>S. infantis</i>	18	-	-	-	405(29.3)
<i>S. muenchena</i>	14	2	-	-	19(1.4)
<i>S. agona</i>	10	2	-	2	21(1.5)
<i>S. heidelberg</i>	9	-	-	-	18(1.3)
<i>S. london</i>	9	-	-	1	18(1.3)
<i>S. brandenburg</i>	5	2	-	1	16(1.2)
<i>S. paratyphi B</i>	6	-	-	-	14(0.8)
<i>S. anatum</i>	4	-	-	-	
<i>S. derby</i>	3	-	-	-	
<i>S. emek</i>	2	-	-	-	
<i>S. paratyphi</i>	-	-	-	1	
Other <i>Salmonella</i> spp.	37	1	-	-	
(%)	1,085	254	15	29	1,383(100)

from Choi CS. Salmonellosis. Zoonoses. 1st ed. Seoul : Seoheumg Publ., 2002 : 101 - 6

11.		Salmonella										(2003~2004)			
	2003												2004*		
	1	2	3	4	5	6	7	8	9	10	11	12	(%)	(%)	
<i>S. Typhi</i>	0	5	13	15	10	5	4	18	4	1	3	2	80(13.4)	24(12.0)	
<i>S. Paratyphi A</i>	1	19	5	6	5	0	0	0	1	0	3	0	35(5.8)	1(0.5)	
<i>S. Enteritidis</i>	8	10	10	10	36	23	23	16	23	29	14	10	212(35.6)	85(42.7)	
<i>S. Typhimurium</i>	5	2	1	2	37	2	16	13	6	7	4	3	98(16.4)	32(16.0)	
<i>Salmonella</i> spp.	9	6	1	3	19	11	44	16	26	22	9	4	170(28.5)	57(28.6)	
(%)	23	42	30	36	102	41	87	63	60	59	33	19	595(100)	199(100)	

* cumulative total by July 2004

Yersinia 161(1.0%), *Listeria* 138(0.8%), *Vibrio* 10
Cyclospora 15 (0.09%) *salmonella* 1,085
Salmonella spp. 가 *S. Typhimurium* 375 (34.5%), *S. Enteritidis*
366 (33.7%), *S. Typhi* 181 (16.6%)

254

S. Typhi(87.0%) , 가 S. Typhimurium (6.3%) S. Paratyphi A(2.3%) .

11 2003 (595)

2004(199) salmonella 794 (32, 33). , , S. Enteritidis(35.6~42.7%), Salmonella spp. (28.5~28.6%) S. Typhimurium(16.0~16.4%), , , , , S. Typhi(12.0~13.4%) S. Paratyphi A(0.5~5.8%) (, , ,) 2 salmonella가 (, 가) , () (33~35).

5) (Glanders, Malleus) (Burkholderia mallei) (, , 가 . WHO 10 가 (30). (, 67 가 12 ,) (, ,), (1.79%) 2004 7 7 , () 57 가 23 (40.3%) . () . (4, 5). 1906 ~ 1920 , 1940 ~ 1947 1 ~ 529 (31). (4). 1 , 1982 가 (4). 1012 ~ 1943 60 23 . , , Q , (

)

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(

)

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(

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, 가 , ,

가 . 가

, Lyme ,

Q .

,

: ⑤

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