表2-2. *Salmonella* spp. 感染とIBDの文献検索式 (MEDLINE)

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations April 11, 2012
Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1946 to Present with Daily Update
検索期間: 1946年～2012年4月11日

	キーワード	ヒット数
1	Salmonella Infections/	10522
2	exp Salmonella/	50876
3	salmonella.tw.	53140
4	or/1-3	69139
5	exp Inflammatory Bowel Diseases/	53366
6	inflammatory bowel disease*.tw.	22016
7	ibd.tw.	9087
8	ulcerative colitis.tw.	23679
9	uc.tw.	7785
10	crohn* disease*.tw.	26996
11	cd.tw.	69171
12	regional enteritis.tw.	855
13	granulomatous ileitis.tw.	13
14	granulomatous ileocolitis.tw.	25
15	or/5-14	133760
16	4 and 15	469
17	animals/	4911362
18	humans/	12211562
19	17 not (17 and 18)	3608861
20	16 not 19	342
21	limit 20 to systematic reviews	0
22	limit 20 to journal article	321
23	limit 20 to english language	297
24	limit 22 to english language	**280**

表2-3. *Salmonella* spp. 感染とIBDの文献検索式 (Embase)

Embase May 09, 2012
検索期間: 1974年～2012年5月9日

	キーワード	ヒット数
1	salmonellosis'/de AND [embase]/lim NOT [medline]/lim	2,240
2	fowl typhoid'/de AND [embase]/lim NOT [medline]/lim	4
3	pullorum disease'/de AND [embase]/lim NOT [medline]/lim	5
4	Salmonella'/de AND [embase]/lim NOT [medline]/lim	5,158
5	Salmonella arizonae'/de AND [embase]/lim NOT [medline]/lim	26
6	Salmonella choleraesuis'/de AND [embase]/lim NOT [medline]/lim	94
7	Salmonella dublin'/de AND [embase]/lim NOT [medline]/lim	87
8	Salmonella enterica'/de AND [embase]/lim NOT [medline]/lim	854
9	Salmonella enteritidis'/de AND [embase]/lim NOT [medline]/lim	750
10	Salmonella gallinarum'/de AND [embase]/lim NOT [medline]/lim	67
11	Salmonella infantis'/de AND [embase]/lim NOT [medline]/lim	43
12	Salmonella minnesota'/de AND [embase]/lim NOT [medline]/lim	68
13	Salmonella paratyphi B'/de AND [embase]/lim NOT [medline]/lim	103
14	Salmonella paratyphi C'/de AND [embase]/lim NOT [medline]/lim	18
15	Salmonella typhimurium'/de AND [embase]/lim NOT [medline]/lim	3,925
16	Salmonella virchow'/de AND [embase]/lim NOT [medline]/lim	16
17	Salmonella wien'/de AND [embase]/lim NOT [medline]/lim	67
18	salmonella*:ab,ti AND [embase]/lim NOT [medline]/lim	9,197
19	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18	13,608
20	inflammatory bowel disease':ab,ti OR 'inflammatory bowel diseases':ab,ti AND [embase]/lim NOT [medline]/lim	9,922
21	ibd:ab,ti AND [embase]/lim NOT [medline]/lim	6,451
22	ulcerative colitis'/de AND [embase]/lim NOT [medline]/lim	11,704
23	ulcerative colitis':ab,ti AND [embase]/lim NOT [medline]/lim	8,800
24	uc:ab,ti AND [embase]/lim NOT [medline]/lim	5,059
25	crohn disease'/de AND [embase]/lim NOT [medline]/lim	14,746
26	colon Crohn disease'/de AND [embase]/lim NOT [medline]/lim	384
27	crohn*:ab,ti AND disease*:ab,ti AND [embase]/lim NOT [medline]/lim	11,983
28	cd:ab,ti AND [embase]/lim NOT [medline]/lim	29,818
29	regional enteritis':ab,ti AND [embase]/lim NOT [medline]/lim	88
30	granulomatous ileitis':ab,ti AND [embase]/lim NOT [medline]/lim	1
31	granulomatous ileocolitis':ab,ti AND [embase]/lim NOT [medline]/lim	10
32	#20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31	54,651
33	#19 AND #32	224
34	human'/de AND [embase]/lim NOT [medline]/lim	2,472,964
35	nonhuman'/de AND [embase]/lim NOT [medline]/lim	819,048
36	#34 NOT (#34 AND #35)	2,322,604
37	#33 AND #36	84
38	#37 AND [article]/lim AND ([english]/lim OR [japanese]/lim)	**13**

表3. STEC 感染とHCならびにHUSの文献検索式 (MEDLINE)

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations May 30, 2012
Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1946 to Present with Daily Update
検索期間: 1946年～2012年5月30日

	キーワード	ヒット数
1	Enterohemorrhagic Escherichia coli/	268
2	(enteroh*emorrhagic and coli).tw.	1997
3	(entero h*emorrhagic and coli).tw.	23
4	ehec.tw.	1292
5	Shiga-Toxigenic Escherichia coli/	481
6	(shiga* and coli).tw.	2775
7	stec.tw.	1171
8	(vero* and coli).tw.	1968
9	vtec.tw.	623
10	(O157 or O26 or O111 or O103 or O121 or O45 or O145 or O104).tw.	3003
11	or/1-10	7344
12	(h*emorrhag* and colitis).tw.	1497
13	Hemolytic-Uremic Syndrome/	4268
14	h*emolytic uremic syndrome*.tw.	3860
15	hus.tw.	2165
16	or/12-15	6889
17	11 and 16	1647
18	animals/	4944759
19	humans/	12302412
20	18 not (18 and 19)	3629213
21	17 not 20	1496
22	limit 21 to journal article and (eng or jpn).lg.	**1301**

図1-1. *Salmonella*-ReA retrospective study メタ分析結果

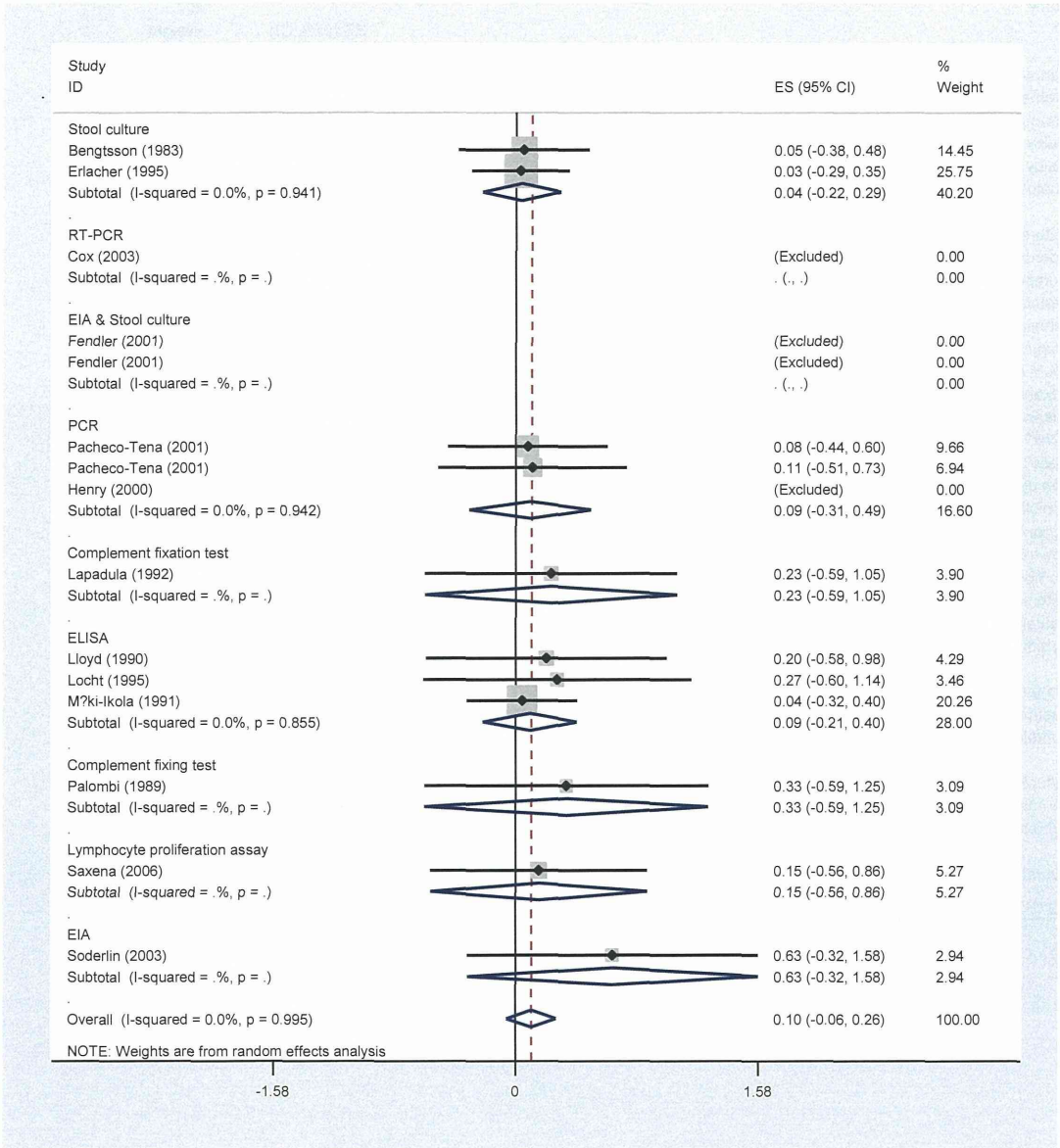


図1-2. *Salmonella*-ReA prospective study メタ分析結果

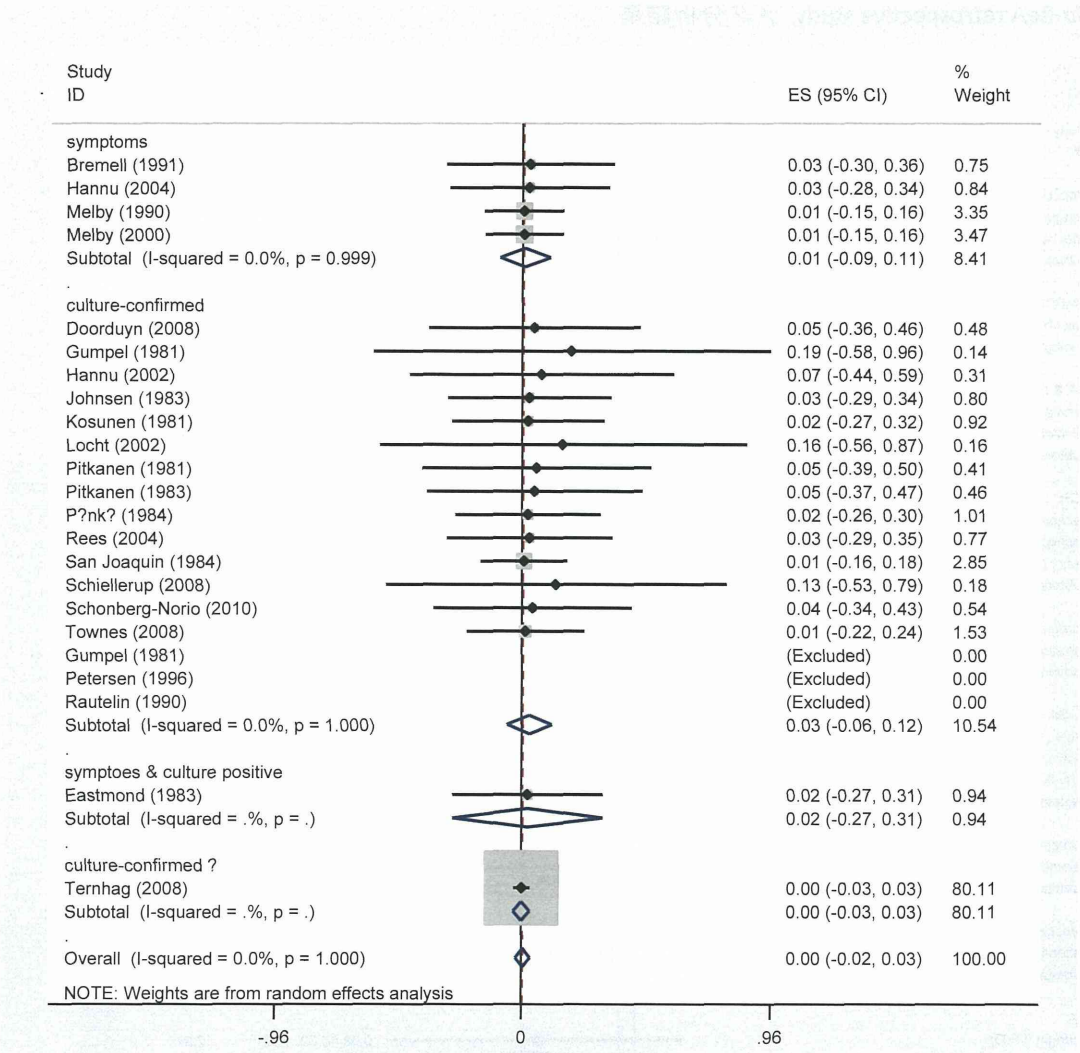


図2-1. *Salmonella*-IBD retrospective study メタ分析結果

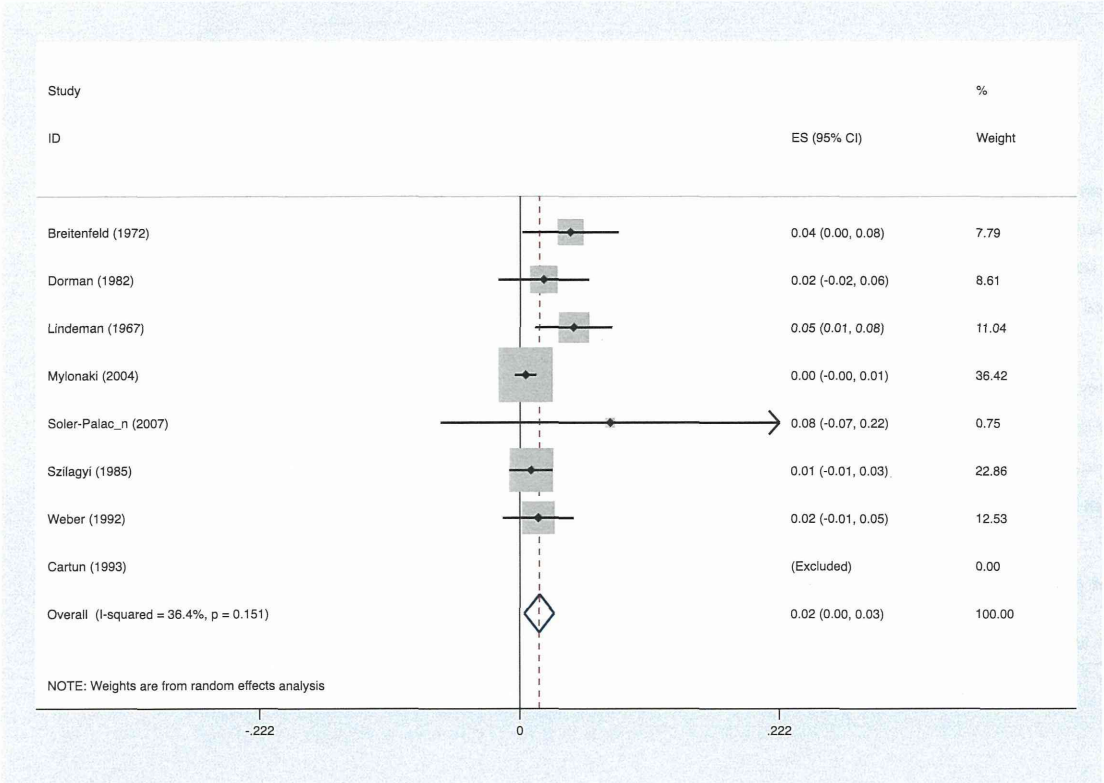


図3-1. STEC-HC prospective study メタ分析結果

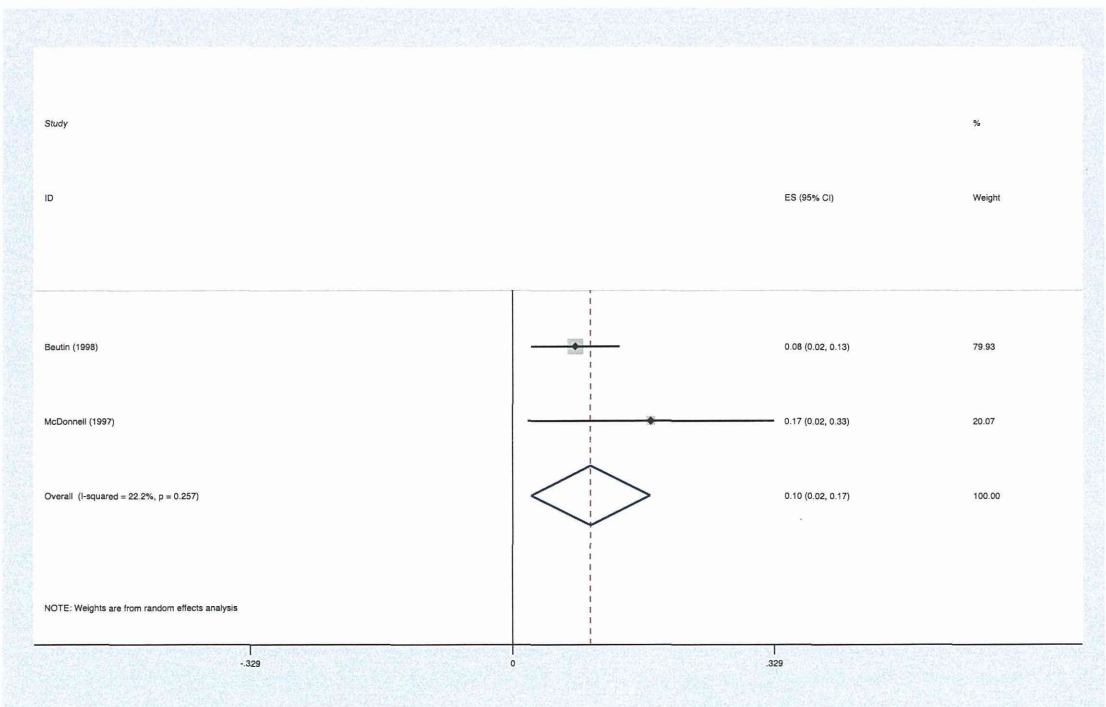


図3-2. STEC-HUS retrospective study メタ分析結果

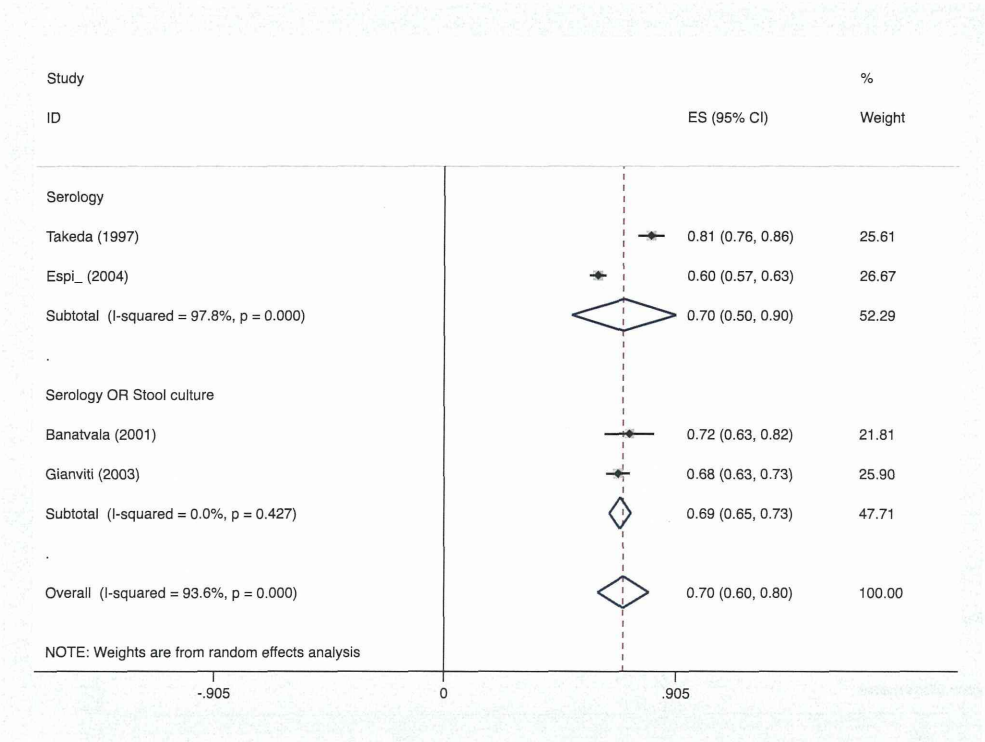
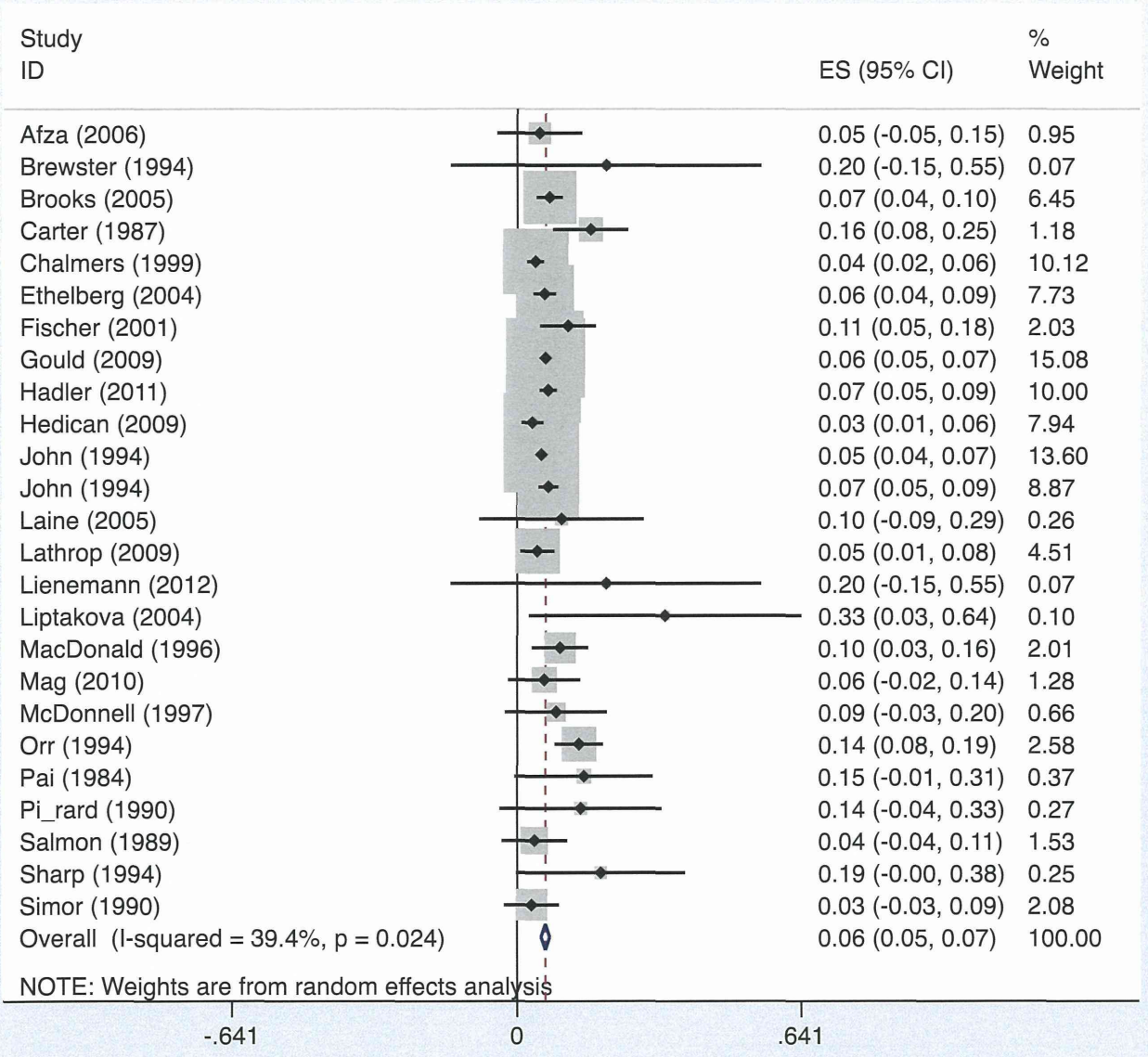


図3-3. STEC-HUS prospective study メタ分析結果


Study ID
ES (95% CI)
% Weight
Afza (2006) 0.05 (-0.05, 0.15) 0.95
Brewster (1994) 0.20 (-0.15, 0.55) 0.07
Brooks (2005) 0.07 (0.04, 0.10) 6.45
Carter (1987) 0.16 (0.08, 0.25) 1.18
Chalmers (1999) 0.04 (0.02, 0.06) 10.12
Ethelberg (2004) 0.06 (0.04, 0.09) 7.73
Fischer (2001) 0.11 (0.05, 0.18) 2.03
Gould (2009) 0.06 (0.05, 0.07) 15.08
Hadler (2011) 0.07 (0.05, 0.09) 10.00
Hedican (2009) 0.03 (0.01, 0.06) 7.94
John (1994) 0.05 (0.04, 0.07) 13.60
John (1994) 0.07 (0.05, 0.09) 8.87
Laine (2005) 0.10 (-0.09, 0.29) 0.26
Lathrop (2009) 0.05 (0.01, 0.08) 4.51
Lienemann (2012) 0.20 (-0.15, 0.55) 0.07
Liptakova (2004) 0.33 (0.03, 0.64) 0.10
MacDonald (1996) 0.10 (0.03, 0.16) 2.01
Mag (2010) 0.06 (-0.02, 0.14) 1.28
McDonnell (1997) 0.09 (-0.03, 0.20) 0.66
Orr (1994) 0.14 (0.08, 0.19) 2.58
Pai (1984) 0.15 (-0.01, 0.31) 0.37
Pi_rard (1990) 0.14 (-0.04, 0.33) 0.27
Salmon (1989) 0.04 (-0.04, 0.11) 1.53
Sharp (1994) 0.19 (-0.00, 0.38) 0.25
Simor (1990) 0.03 (-0.03, 0.09) 2.08
Overall (I-squared = 39.4%, p = 0.024) 0.06 (0.05, 0.07) 100.00
NOTE: Weights are from random effects analysis
-.641
0
.641

平成24年度厚生労働科学研究費補助金
食品の安全確保推進研究事業（H24-食品-指定-014）
「食品安全行政における政策立案、政策評価に資する
食品由来疾患の疫学的推計手法に関する研究」

日本の食品安全行政の現状分析

研究分担者　宮川昭二　　国立感染症研究所　国際協力室

研究要旨　WHO/FERGの食品由来疾患による健康時間の損失に係るカントリー・スタディ研究枠組みで求められる政治状況に関する分析(Policy Situation Analysis)を実施した。昨年度の分担研究において、食品安全行政に係るレビューを行い、社会経済環境の変化と食品安全への影響等4課題が行われたが、本年度は東京電力福島第一原子力発電所事故への食品安全行政の対応について、食品衛生法に定める基準値設定以降の検査計画等の策定、原子力災害特別措置法に基づく出荷制限、食品中の放射性物質検査結果及び食品からの一日摂取量推定に着目した。

A. 研究目的

WHO/FERG (Foodborne Disease Burden Epidemiology Reference Group)が進める食品由来疾患による健康時間の損出に係るカントリー・スタディの研究枠組みの一環として、昨年度に引き続き我が国における政治状況に関する分析(Policy Situation Analysis(PSA))を行った。

昨年度の研究を踏まえ、本年度においては国際的関心の高い東日本大震災に伴う東京電力福島第一原子力発電所事故への我が国の対応、特に食品中で放射性物質汚染への対応に注目した。

食品中での放射性物質対策について、本年度末時点での要約を取りまとめたものであり、各国の食品安全行政の参考となることを期待する。

B. 研究方法

既存文献の調査、厚生労働省食品安全部等関係省庁ホームページを参照した。

C. 研究結果

1. 平成24年度末段階でのとりまとめ

“Summary of Japan’s Control Measures on Radioactive Contamination in Food”(別添1)

食品衛生法に基づく食品中の放射性物質の基準、原子力災害対策特別措置法に基づく出荷制限、都道府県等が実施する食品中の放射性物質検査計画及び措置、食品中の放射性物質検査結果及び食品からの一日摂取量推計について、要約を取りまとめた。

2. WHO 暫定リスク評価報告の検証

WHO が取りまとめた原子力発電所事故に関する暫定的暴露推計及び健康リスク評価報告（以下）について、食品中の放射性物質対策等の観点から、本件対策における今後の方向性など WHO が指摘する考察について初期的な検討を行った。

“Health risk assessment from the nuclear accident after the 2011 Great East Japan earthquake and tsunami, based on a preliminary dose estimation “(WHO, Feb 2013)

"Preliminary dose estimation from the nuclear accident after the 2011 Great East Japan Earthquake and Tsunami" (WHO, May 2012)

D、E. 考察と結論

食品における放射性物質対策において、平成24年度には食品衛生法に基づく残留基準の設定と都道府県ベースでの検査計画策定・実施が進められた。厚生労働省などが取りまとめ公表する検査結果及び出荷停止などの措置の状況から、食品に由来する放射性物質対策において重要となる食品の種類や産地を明らかにしてきている。また、厚生労働省が行った放射性物質の一日摂取量調査結果では、一般的な国民の食生活から取り込まれる放射性物質は限定的であることを示した。

食品中の放射性物質汚染対策及び食品からの放射性物質の摂取に伴うリスク評価については、引き続き国際的に関心が高いものである。WHO による健康リスク評価報告の中で本事案に基づく食品汚染等については継続的なモニタリングと評価が必要であると指摘している。

このことから、次年度以降も食品汚染等の実態調査などのモニタリング状況、政府等が行うリスク評価、また食品中の放射性物質への対策について、情報収集及び分析を行うことが重要であると考える。

F. 健康危険情報

特記事項なし

G. 研究発表

特記事項なし

H. 知的財産権の出願・登録状況

(予定を含む。)

特許取得

特記事項なし

実用新案登録

特記事項なし

その他

特記事項なし

Summary of Japan's Control Measures for Radioactive Contamination in Foods

The 2011 Great East Japan Earthquake resulted series of failures of Fukushima Dai-Ichi Nuclear Power Plants which caused massive radioactive contamination in the surrounding environment. The Government of Japan has been taking necessary measures to protect Japanese citizens from radioactive exposures. One of the control measures aims to manage its contamination in food and water which are produced in the affected area.

The followings are summaries of Japan's control measures on radioactive contamination in Foods. The information appeared here is as of the end of 2012 Fiscal Year, March 2013.

1. Enforcement of Limits of Radioactive Contamination in Foods

   The limits of radioactive contamination in foods are enforced since April 2012 under the Food Sanitation Law. The Limit has been established on the basis of risk assessment by the Food Safety Commission, independent risk assessment body in the Government.

   In accordance with the requirements in the Food Sanitation Law prefectural and local governments enforce this regulation by establishing their own monitoring activities and legally ordering to withdraw from market the foods which found exceeding the limits and suspend marketing their products. The monitoring plans are based upon the information on food productions and results of previous monitoring activities.

2. Control Measures on Food Production in the Affected Area

   Milk, vegetables, rice and crops, carp and fresh water fishes, sea fishes, beef and wild boar meat which are produced in certain area in Fukushima Prefecture are not allowed to be marketed currently in accordance with the regulations of the Act on special Measures Concerning Nuclear Emergency Preparedness.

   Furthermore, wild mushrooms and vegetables, crops, wild boar meat, fresh water fish and sea food, and tea which are produced in particular area in Miyagi, Ibaragi,

Tochigi Prefectures are also not allowed to be marketed currently.

3. Summaries of Food Monitoring against Radioactive Contamination
The Food Safety Department of the Ministry of Health, Labour and Welfare summarizes the results of the monitoring activities on radioactive contamination in foods periodically.

According to the summary report by the Food Safety Department April 2013, in total 268,343 samples from entire country have been monitored since April 2012 when the legal limits of the Food Sanitation Law was enforced. 2,297 samples found exceeding the limit and enforced legal corrective measures.
Among 2,297 cases it is found that 836 seafood, 228 game meat, 179 wild mushroom and vegetable produced in Fukushima, 162 wild mushroom and vegetable produced in Iwate and 120 wild mushroom and vegetable produced in Tochigi.

The monitoring activities were performed by prefecture and local government until the end of March 2012 when the provisional food safety limits on radioactive contamination were enforced. 137,037 samples were monitored in total and 1,204 samples found exceeding the provisional limit. Among 1,204 cases there are 302 vegetables, 227 seafood, 165 meat produced in Fukushima and 127 tea produced in Saitama.

4. Estimated Intake of Radioactive Substances from average diet in Japan
The National Institute of Drug and Food Hygiene has been conducting an estimation on dietary intake of radioactive substances from diet. The recent study showed that 0.0009 – 0.0094 mSV as radioactive Cesium per person per year in 12 area of Japan is estimated in dietary intake. The study are based on market-basket sampling in accordance with national Japanese diet surveillance. The sampling was performed during February and March 2012.

The Institute also conducts an estimation on dietary intake of radioactive substances from diet by using samples collected from individuals' diet. Dietary intakes of 0.0012 – 0.0034 mSV as radioactive Cesium per person per year is estimated from this study. The samples were collected from 39 individuals in 6 different age groups in 9 area of Japan from March to May 2012.

The above shows that radioactive exposure from diet among Japanese citizens in certain period is generally observed limited by enforcement of control measures on radioactive contamination in food.

WHO released two reports on its risk assessment and preliminary dose estimation of the nuclear accident, "Health risk assessment from the nuclear accident after the 2011 Great East Japan earthquake and tsunami, based on a preliminary dose estimation" (WHO, Feb 2013) and "Preliminary dose estimation from the nuclear accident after the 2011 Great East Japan Earthquake and Tsunami" (WHO, May 2012). The risk assessment report says that further risk assessment is necessary based upon the result of continuous monitoring activities on food and environment.

Therefore the update information on the continuing monitoring activities by the national and local government should be reviewed in timely basis.