DT の薬剤費用が TT の 30% 弱（£7,292/25,455）であることなどが本検討と大きく異なる点としてあげられ、結果の相違につながったものと考えられた。また、Liu S[22]らアメリカからの報告では、線維化の進んだ慢性肝炎では US$47,400/QALY であったが、軽症の線維化患者を対象とした結果は US$91,000/QAL であった。Cure らの報告と同様にテラビックが US$4,400/週と日本の 5 倍以上の薬価であること、および。慢性肝炎の費用の年間医療費が今回の我々の研究班のものと比較し半額以下であったことなどが影響した結果と考えられた。

本検討では、自然歴等のモデル内に入力したパラメータの大部分を日本からのデータを用いたもので行った。その点で、これまでの同様の検討とは異なると考えられた。すなわち、肝細胞癌発症率など欧米とは異なる疫学情報をもとにした自然歴や、初めて規模の比較的大きな患者調査による効用値、全国の多施設における費用調査などをもとにしており、現在の日本の状況が反映された結果といえ、その意義は高いものと考えられた。一方で、以下のような点で限界がある。

1. TT に次いで効果が期待できる DT72W との直接比較した検討がなく、DT48W のデータと LVR に対する効果についての結果を組みあせたこと。また、EVR、LVR の率を他の論文とのデータを用いて按分して求めたこと。
2. TT の副作用で貧血、腎機能障害、食欲不振等に対する治療介入の費用、および、COL 低下については考慮しなかったこと。
3. 感度分析において、効用値の SD をもとした分布ではなく、SD を狭めてそれぞれの 95%の信頼区間の中で慢性肝炎>代償性肝硬変>非代償性肝硬変の関係が保たれるように設定したことなどの方法的な問題
4. 一部、費用については、一施設のデータを用いたこと、また、肝移植のように文献データを用いたこと

などである。

今後、これらのデータの取得がされた段階で、そのデータを加えてより信頼性の高い結果にアップデートする必要があると考えられた。

E. 結語

本研究班で得られた費用および効用値データをもとに Genotype 1 型慢性 C 型肝炎患者に対する TT と従来の標準治療である DT48W・DT72W との費用対効果を検討した。その結果、TT は後 2 者に比較し、期待余命、および QALY の延長をもたらし、生涯医療費からみると費用削減に寄与することが示され、費用対効果の優れた治療法であることが示唆された。

F. 文献

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C patients with sustained virologic response to interferon therapy. Liver Int. 2004;24(6):603-10. [PMID: 15566511]

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G. 研究発表

1．論文発表 なし

2．学会発表

Haku Ishida, Isao Sakaida, Shuji Terai,et. al. Cost-effectiveness of 72-week vs. 48-week treatment with peginterferon plus ribavirin in chronic hepatitis C genotype-1 infected Japanese patients
SMDM Asia-Pacific 2014 January 6 (Singapore)

H. 知的所有権の取得など

1．特許許可 なし

2．実用新案登録 なし

厚生労働科学研究費補助金（難病・がん等の疾患分野の医療の実用化研究事業）
ウイルス性肝疾患に係る各種対策の医療経済評価に関する研究
分担研究報告書

I. C型・B型慢性肝炎に対する標準治療についての医療経済分析の先行研究調査
II. C型慢性肝炎に対する標準治療の費用対効果分析：プロテアーゼ阻害薬を含む3剤併用療法の費用対効果分析

図表:

表 1-1　C 型慢性肝炎治療の医療経済評価　文献リスト（1）

No	Author	Pub Year	Country	Target CHC	Patients Characteristics: Age/Gender/Histology/ Genotype	R*	Strategy	Perspective	Model	CH stage*	Decomp. Cirrhosis**	Time horizon	Sim. Cycle***	Disc rate	Journal
1	Bennett WG	1997	USA	Mild CHC	Age: 35-yo		1 No treatment(Standard care) 2 Interferon-α-2b 24W	Managed Care	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.05	Ann Intern Med. 1997 Nov 15;127(10):855-65.
2	Kim WR	1997	USA	Aggressive CHC & Indolent CHC	Age: 30 , 40 , 50 , 60-yo		1 No treatment 2 Intrerferon α 6M 3 Intrerferon α 12M	Health Care Payer	Markov			lifelong	1Y	0.03	Ann Intern Med. 1997 Nov 15;127(10):866-74
3	Davis GL	1998	USA	Mild CH	Age: 35-yo		1 No treatment 2 Interferon 6 M 3 Interferon 18M	Health Care Payer	Markov	mild/moderate		lifelong	1Y	0.03	J Viral Hepat. 1998 Sep;5(5):313-21.
4	Shiell A	1999	Australia	CHC	Age: 40-yo		1 No treatment 2 IFN α 6M 3 IFN α 12 M	Health Care Payer	Markov			lifelong	1Y	0.03	Med J Aust. 1999 Aug 16;171(4):189-93.
5	Younossi ZM	1999	USA	CHC	Age: 45-yo		1 no treatment 2 IFN al-2b alone 3 CMB therapy (IFN-a2b +RBV) for all IFN-naïve patients 4 IFN-a2b alone for 48 weeks followed up by CMB therapy for 24 weeks given to relapsers only (IFN/CMB-R) 5 IFNa-2b alone for 48 weeks followed up by CMB therapy for relapsers and non responders (NR) for 24 weeks (IFN/CMB) 6 HCV genotyping, followed up by CMB for interferon-naive patients.Those with genotype 1 received 48 weeks of CMB therapy, whereas other patients received only 24 weeks (CMB-G)	Health Care Payer	Markov			lifelong	1Y	0.03	Hepatology. 1999 Nov;30(5):1318-24.
6	Buti M	2000	Spain	CHC	Age: 30, 45, 60-yo		1 IFN α-2b for 12 M 2 IFN α-2b +RBV 6M 3 IFN α-2b +RBV 12 M	Health Care Payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	J Hepatol. 2000 Oct;33(4):651-8.
7	Sinha M	2000	USA	CHC in Children	Age: 10-yo		1 IFN α 6M 2 IFN α 12M 3 No treatment	Societal	Markov			66 years	1Y	0.03	Pediatr Infect Dis J. 2000 Jan;19(1):23-30.
8	Wong JB	2000	USA	Mild CHC	Age: Mean 40.1-yo Female:0.346 Genotype 2 or 3: 0.317		1 no treatment 2 watchful waiting and treat patients with cirrhosis 3 watchful waiting and treat patients with moderate cirrhosis 4 immediate empirical combination therapy	Societal	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Ann Intern Med. 2000 Nov 7;133(9):665-75.
9	Wong JB	2000	USA	CHC	Age: Mean 42.1- 44.7-yo Mild CH:0.247- 0.334 Moderate CH: 0.618- 0.688 Cirrhosis: 0.04-0.065 Genotype 1:0. 642- 0.723		1 IFN 24 w 2 IFN 48 w 3 IFN and RBV 24 w 4 IFN and RBV 48 w	Health Care Payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Am J Gastroenterol. 2000 Jun;95(6):1524-30.
10	Wong JB	2000	USA	Relapsed CHC after IFN therapy	Age: Mean 44-yo Female: 0.35 Mild CH:0.34 Moderate CH:0.63	*	1 Interferon monotherapy 2 Combination of interferon + RBV	Societal	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Am J Med. 2000 Apr 1;108(5):366-73
11	Sagmeister M	2001	Switzerland	CHC	Age: Mean 42.2-yo Female: 0.349 Moderate CH: 0.663 Genotype 1: 0.646 Genotype 2/3: 0.323		1 IFN monotherapy 2 Combination therapy I 3 Combination therapy II 4 Combination therapy III 5 No treatment	Health Care Payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Eur J Gastroenterol Hepatol. 2001 May;13(5):483-8.

表 1-2　C 型慢性肝炎治療の医療経済評価　文献リスト(2)

No	Author	Pub Year	Country	Target Cohort	Patients Characteristics: Age/Gender/Histology/ Genotype	R*	Comparators	Perspective	Model	CH stage*	Decomp. Cirrhosis**	Time horizon	Sim. Cycl***e	Disc rate	Journal
12	Sennfält K	2001	Sweden	CHC	Age 43-yo Mild CH: 0.322 Moderate CH: 0.633 Cirrhosis: 0.045		1 no treatment 2 IFN monotherapy 3 IFN+RBV 24week 4 IFN+RBV 48week	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Scand J Gastroenterol. 2001 Aug;36(8):870-6.
13	Grieve R	2002	UK	CHC	Age: 40-yo		1 IFN α + RBV 2 No treatment	Health care payer	Markov	mild/moderate		lifelong	1Y	Cost: 0.06 Effect: 0.015	Acta Gastroenterol Belg. 2002 Apr-Jun;65(2):104-9.
14	Kuehne FC	2002	USA	Moderate CHC *with HIV* infection	Age: 35-yo *CD4 cell counts>350 cells/μ* l		1 No treatment *2 IFN α (48 weeks)* 3 PegIFN α (48 weeks) 4 IFNα +RBV (24 weeks) 5 IFN α + RBV (48weeks) 6 PegIFNα + RBV (48 weeks)	Health care payer	Markov	mild/moderate		lifelong	1Y		Arch Intern Med. 2002 Dec 9-23;162(22):2545-56.
15	Stein K	2002	UK	CHC	Age: 40, 41-50, >50years Genotype 1: 50% Genotype 2 or 3: 50%		1 No treatment 2 IFN+RBV 3 Interferon Monotherapy	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.06	Gut. 2002 Feb;50(2):253-8.
16	Buti M	2003	Spain	CHC	Age: 43- yo Mild CH: 0.312 Moderate CH: 0.64 Cirrhosis: 0.048		1 IFN 3MU + RBV (1000-1200mg dep on BW) 48W 2 PegIFN + RBV (800mg fixed dose) 48W 3 PegIFN + RAB (adjusted by BW) 48W 4 PegIFN + RAB (adjusted by BW + C(patients compliant) 48W	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Aliment Pharmacol Ther. 2003 Mar 1;17(5):687-94.
17	Salomon JA	2003	USA	CHC	Age: 40-yo		1 No treatment 2 Interferon 3 Pegylated interferon 4 Interferon and rivavirin 5 Pegylated interferon and rivavirin	Societal	Markov	Fibrosis		lifelong	1Y	0.03	JAMA. 2003 Jul 9;290(2):228-37.
18	San Miguel R	2003	Spain	CHC not responded to IFN monotherapy	Age: 42 yo Mild CH: 0.21 Moderate CH:0.66 Cirrhosis 13%	*	1 no treatment 2 IFN monotherapy 6M 3 IFN(standard dose)+RBV 6M 4 IFN(high dose) +RBV 6M 5. IFN + RBV 12M	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Aliment Pharmacol Ther. 2003 Mar 15;17(6):765-73.
19	Siebert U	2003	Germany	CHC	Average age, gender distribution, genotype distribution, and histology (German CHC)		1 no antiviral therapy 2 Interferon monotherapy 3 nterferon and RBV 4 PegIFN and RBV	Health service system	Markov	mild/moderate		lifelong	1Y	0.03	Ger Med Sci. 2003 Nov 3;1:Doc07.
20	Siebert U	2003	Germany	CHC	Age: 44-yo, Male: 0.66 Genotype 2/3:0.32 Mild CH0.15 Moderate CH:0.78 Cirrhosis:0.07		1 No antiviral treatment 2 IFN+RBV 3 PegIFN+RBV 4 PegIFN+weighted based RBV	Health service system	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Gut. 2003 Mar;52(3):425-32.
21	Wong JB	2003	USA	CHC	Age :44-yo, Female:0.34 Genotype 1 :0.68 Genotype 2 or 3 :0.32 Mild CH:0.15 Moderate CH: 0.78 Cirrhosis: 0.07		1 IFN+RBV 2 PegIFN α-2b +RBV 3 PegIFN α-2b +weight-based RBV	Societal	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Am J Gastroenterol. 2003 Nov;98(11):2354-62.

表 1-3　C 型慢性肝炎治療の医療経済評価　文献リスト(3)

No	Author	Pub Year	Country	Target Cohort	Patients Characteristics: Age/Gender/Histology/ Genotype	R*	Comparators	Perspective	Model	CH stage*	Decomp. Cirrhosis**	Time horizon	Sim. Cycl***	Disc rate	Journal
22	Annemans L	2004	Belgium	CHC	Not stated		Analysis 1 1 monotherapy(IFNα-2b) 2 monotherapy(PegIFNα-2a) Analysis 2 for genotype 1/4/5/6 3 Comibation therpy(IFNα-2b+RBV) 48W 4 Comibation therpy(PegIFNα-2a+RBV) 48W Analysis 3 for genotype 2/3 3 Comibation therpy(IFNα-2b+RBV) 24W 4 Comibation therpy(PegIFNα-2a+RBV) 24W	Health care payer	Markov			25 Year(s)	1Y		Acta Gastroenterol Belg. 2004 Jan-Mar;67(1):1-8.
23	Ishida H	2004	Japan	CHC	Age: 49.6 Female:0.31 Genotype 1b: 0.68 Mild CH:0.41 Moderate CH: 0.54 Cirrhosis:0.04		1 No treatment 2 IFN-α-2b　monotherapy 3 Combination (IFN-α-2b+RBV)	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Hepatol Res. 2004 Mar;28(3):125-136.
24	Salomon JA	2004	USA	CHC	Not stated		1 No treatment 2 Deferred treatment 3 Immediate treatment	Health care payer	Markov	*	*	lifelong	NS	0.03	BMJ. 2004 Sep 25;329(7468):733-6.
25	Shepherd J	2004	UK	CHC	Age: Mean 36-yo		1 No treatment 2 IFNα-2b +RBV 48 week 3 PegIFNα-2b+RBV 48 weeks 4 IFNα-2b 48 weeks 5 PegIFNα-2b 48 weeks.	Societal	Markov		ASC/VH/HE	30 years	1Y	Cost: 0.06 Effect: 0.015	Health Technol Assess. 2004 Oct;8(39):iii-iv, 1-125.
26	Sullivan SD	2004	Italy	CHC	Age: 45-yo Male:All		1 PegIFN α-2a+RBV 2 IFN α-2b+RBV both (48W for G1 or non-G1 and fibrosis, 24 w for nonG1 and no fibrosis)	Health care payer	Markov			lifelong	1Y	0.03	Pharmacoeconomics. 2004;22(4):257-65.
27	Sullivan SD	2004	USA	CHC	Age: 45-y.o Male: all		1 PegIFN α-2b+RBV 2 IFN α-2b+RBV	Health care payer	Markov			lifelong	1Y	0.03	Am J Gastroenterol. 2004 Aug;99(8):1490-6.
28	Shepherd J	2005	UK	Moderate & Severe CHC	Age:Mean 36-yo		1 PegIFNα-2a+RBV 48W 2 IFNα-2b+RBV 48W	Health service system	Markov		ASC/VH/HE	30 Year(s)	1Y	Cost: 0.06 Effect: 0.01	Int J Technol Assess Health Care. 2005;21(1):47-54.
29	Siebert U	2005	Germany	CHC	CHC for the context of German health-care system		1 No antiviral therapy 2 IFNα-2b monotherapy 48W 3 IFNα-2b+RBV 48W 4 pegIFNα-2a+RBV 48W	Health service system	Markov	mild/moderate	ASC/VH/HE	20 Year(s)	NS	0.03	Int J Technol Assess Health Care. 2005 Winter;21(1):55-65.
30	Siebert U	2005	Germany	CHC	CHC for the context of German health-care system		1 no treatment 2 IFN monotherapy(48W) 3 IFN+ RBV(24W) 4 IFN+RBV(48W)	Health care payer	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Eur J Health Econ. 2005 Jun;6(2):112-23.
31	Bernfort L	2006	Sweden	CHC	Age: 43-yo Mild CH;0.322 Moerate CH: 0.678		1 IFNα-2b +RBV 48W 2 PegIFNα-2b +RBV 48W	Health care payer	Markov			lifelong	1Y	0.03	Scand J Infect Dis. 2006;38(6-7):497-505.
32	García-Contreras F	2006	Mexico	CHC Genotype 1	Age: 30-yo		1 No treatment 2 PegIFNα-2a 48W 3 PegIFNα-2a + RBV 48W 4 PegIFNα-2a + RBV + thymosin α-1 48W	Health care payer	Markov		ASC/VH/HE	45 years	1Y	0.03	Arch Med Res. 2006 Jul;37(5):663-73.

表 1-4　C 型慢性肝炎治療の医療経済評価　文献リスト(4)

		Year			Genotype						Cirrhosis	horizon	Cycl	rate	
33	Grieve R	2006	UK	Mild CHC	Age: 40-yo Male:0.6 Genotype 1: 0.5		1 No treatment 2 interferon a-2b + RBV (Max:52W) 3 PegIFN a-2b +RBV (Max:52W)	Health service system	Markov	mild/moderate		up to 50 years	1Y	0.035	Gut. 2006 Sep;55(9):1332-8. Epub 2005 Jun 30.
34	Hornberger J	2006	Italy	CHC with persistently nomral ALT level	Age:Mean 45-yo		Genotype 1 1 PegIFN α-2a+RBV 48W 2 PegIFN α-2a+RBV 24W 3 No treatment Genotype 2/3 1 PegIFN α-2a+RBV 24W 2 No treatment	Health service system	Markov			60 Year(s)	1Y	0.03	J Viral Hepat. 2006 Jun;13(6):377-86.
35	Hornberger J	2006	Italy	CHC with HIV infe	Age: 40-yo Male:0.81 Genotype 1 :0.60 Genotype 2/3:0.40		1 PegIFN α-2a +RBV 48W 2 IIFNα-2a + RBV 48W 3 No treatment	Societal	Markov	Fibrosis		lifelong	1M	0.03	J Clin Virol. 2006 Aug;36(4):283-91. Epub 2006 Jun 9.
36	Lin WA	2006	Taiwan	CHC	Age: 45-yo		1 PegIFN+RBV 24 w without Genotyeping 2 Genotype1 PegIFN 24w & genotype non1 IFN 24w 3 Genotype1 PegIFN 48w & genotype non1 PegIFN 24w	Health care payer	Markov		ASC/VH/HE	lifelong	1Y	0.03	Aliment Pharmacol Ther. 2006 Nov 15;24(10):1483-93.
37	Wright M	2006	UK	Mild CHC	Age:Mean 40.68 Male:0.61 Genotype 1:0.515		1 No treatment 2 IFN α-2b +RBV 48W	health service system	Markov	mild/moderate		lifelong	1Y	0.035	Health Technol Assess. 2006 Jul;10(21):1-113, iii
38	Campos NG	2007	USA	CHC with HIV infe	Age: 44.8 Male:0.77 Genotype1 :0.66 F1:0.25 F2:0.44 F3:0.16 F4:0.16		1 IFNα^2a+RBV 48W 2 PegIFNα-2a 48W 3 PegIFNα-2a+ RBV 48W	Societal	Markov	Fibrosis		lifelong	1M	0.03	Am J Med. 2007 Mar;120(3):272-9.
39	Gerkens S	2007	Belgium	Mild chronic hepa	Age:45-yo		Genotype1-4-5-6 1 Direct Treat Mild CH 2 Monitor & Treat Moderate CH (METAVIR F2) Genotype2-3 1 Direct Treat Mild CH 2 Monitor & Treat Moderate CH (METAVIR F2)	Health care payer	Markov	mild/moderate		30 year	1Y	Cost: 0.03 Effect: 0.015	J Viral Hepat. 2007 Aug;14(8):523-36.
40	Gerkens S	2007	Belgium	Moderate CHC with Persisitent normal ALT	Age: 45 y.o. Male:0.5		1 Treat all 2 Only monitor	Health Care paye	Markov	mild/moderate		30 years	1Y	Cost: 0.03 Effect: 0.015	Acta Gastroenterol Belg. 2007 Apr-Jun;70(2):177-87
41	Lidgren M	2007	Sweden	CHC	Age: Mean 45-yo Male: 0.61 Genotype 1:0.382 2:0.292 3:0.326 F0: 0 F1: 0.136 F2: 0.265 F3: 0.224 F4: 0.129		1 No treatment 2 IFN monotherapy 48W 3 IFN and RBV 48W 4 IFN and RBV duration modified by genotype (G2/3 24W G1 48W) 5 PegiIFN and RBV duration modified by genotype (G2/3 24W G1 48W)	health-economic	Markov	Fibrosis		lifelong	1Y	0.03	Scand J Gastroenterol. 2007 Jul;42(7):867-77.

表 1-5　C 型慢性肝炎治療の医療経済評価　文献リスト(5)

No	Author	Pub Year	Country	Target Cohort	Patients Characteristics: Age/Gender/Histology/ Genotype	R*	Comparators	Perspective	Model	CH stage*	Decomp. Cirrhosis**	Time horizon	Sim. Cycle***	Disc rate	Journal
42	Nakamura J	2007	Japan	CHC	Age: 45-yo Male:All		1 New protocol subgroup:A Genotype:1 viral load:High 2 New protocol subgroup:B Genotype:1 viral load:Low, RVR(+) 3 New protocol subgroup:C Genotype:1 viral load:Low, RVR(-) 4 New protocol subgroup:(Weighted average of subgroupB and C) Genotype:1 viral load:Low 5 New protocol subgroup:D Genotype:2or3 viral load:not considerd 6 New protocol subgroup:E Genotype:2or3 viral load:not considerd 7 New protocol subgroup:(Weighted average of subgroupD and E) Genotype:2or3 viral load:not considerd 8 Standard protocol Genotype:1 viral load:not considerd 9 Standard protocol Genotype:1 viral load:Low 10 Standard protocol Genotype:2or3 viral load:not considerd 11 No treatment	Not stated	Markov			lifelong (upto 30 yrs)	1Y	0.03	Eur J Gastroenterol Hepatol. 2007 Sep;19(9):733-9.
43	Shepherd J	2007	UK	Mild CHC	Age: 45-yo F0: 0.57 F1: 0.47		1 Peg IFN (α-2a/Peg IFN α-2b) + RBV 48W 2 Peg IFN (α-2a/ α-2b) 48W 3 IFN alph-2a/α-2b +RBV 48W 4 best standard care	NHS and personal social services	Markov			lifelong	1Y	Cost: 0.06 Effect: 0.015	Health Technol Assess. 2007 Mar;11(11):1-205, iii.
44	Yeh, Wei-Shi	2007	USA	CHC with liver fibrosis	Age: 45yo or 55 yo Male: All		1 PegIFN α-2a + RBV (G1:48W G2/3:24W) 2 PegIFN α-2b + RBV (G1:48W G2/3:24W) 3 No Treatment	Vetaran Affairs Health Care system	Markov	mild/moderate	ASC/VH/HE	lifelong	1Y	0.03	Pharmacotherapy 27(6); 813-824, 2007
45	Nakamura J	2008	Japan	CHC (slow virolo	Age: 43-yo Male:All		1 standard protocol 2 extended protocol 3 No treatment	Not stated	Markov			30 years	1Y	0.03	J Viral Hepat. 2008 15(4):293-9.
46	Sutton AJ	2008	UK	chronic hepatitis (	Age: 15-24, 25-34, 35+ Genotype 2/3: 0.516		1 Case -finding arm 2 Noncase-fnding arm	Health care payer	Markov	mild/moderate		80 Years	3M	0.035	J Viral Hepat. 2008 Nov;15(11):797-808.
47	Tan JA	2008	USA	CHC in Prison	Age: 41-yo Male :0.873 Genotype 1: o.78 No fibrosis: 0.3 Portal fibrosis:0.45 bridging fibrosis:0.18 Cirrhosis:0.06		1 No treatment 2 PegIFN+RBV	U.S. prison health care system.	Markov	Fibrosis		lifelong	6M	0.03	Hepatology. 2008 Nov;48(5):1387-95.
48	Fonseca MC	2009	Brazil	CHC	Age: 30 yo Genotype 1: 0.74		1 PegIFN + RBV 2 IFN + Rib	Health care payer	Markov	mild/moderate		lifelong	1Y	0.03	Braz J Infect Dis. 2009 Jun;13(3):191-9.
49	Grishchenko, M	2009	UK	CHC	Age: 30 yo, 40 yo, 50yo Genotype 1:0.33		1 PegIFN α-2a (or 2b) 2 No treatment	health service system	Markov	mild/moderate		lifelong	1Y	0.035	Int J Technol Assess Health Care 25(2);171-180:2009

表 1-6　C 型慢性肝炎治療の医療経済評価　文献リスト(6)

No	Author	Pub Year	Country	Target Cohort	Patients Characteristics: Age/Gender/Histology/ Genotype	R*	Comparators	Perspective	Model	CH stage*	Decomp. Cirrhosis**	Time horizon	Sim. Cycl***	Disc rate	Journal
50	Siebert U	2009	Germany	CHC	Age: Mean 44-yo Male: 0.66 Genotype2/3:0.32 Mild CH: 0.15 Modate CH: 0.78 Cirrhosis:0.07		1 No antiviral treatment 2 IFN-α-2b+ RBV 3 PegIFN-α-2b+RBV 4 German guideline	Societal	Markov	mild/moderate		lifelong	1Y	0.03	Pharmacoeconomics. 2009;27(4):341-54
51	Gheorghe, L.	2010	Romania	CHC genotype1	Age: 45 -yo Male:0.70 Genotype1: All		1 Peg-IFN α-2a +RBV 48W 2 Peg-IFN α-2b +RBV 48W	health service system	Markov			lifelong	1Y	0.035	Hepatogastroenterology. 2010 Jul-Aug;57(101):939-44
52	Saab S	2010	USA	Compensated cirrhosis	Age: 55-yo		1 No treatment 2 Treatment during compensated cirrhosis 3 Treatment during decompensated cirrhosis 4 Treatment during posttransplant recurrence	Health care payer	Markov			17 Years	1Y	0.03	Liver Transpl. 2010 Jun;16(6):748-59.
53	Iwasaki Y	2011	Japan	CHC genotype2	Age: 45-yo Male:All		1 No IFN therapy 2 IFN α-2b 24W 3 IFN α-2b plus RBV 24W 4 PEG-IFN α-2a plus RBV 24W 5 PEG-IFN α-2b plus RBV 24W 6 CIFN，9μg TIW 24W 7 CIFN，12μg with induction 24W 8 CIFN，18μg with induction 24W	health care system	Markov			lifelong	1Y	0.03	Scand J Gastroenterol. 2011 Jan;46(1):79-90. Epub 2010 Sep 7.
54	Martin NK	2012	UK	CHC with Injection drug user	Age: 20-yo Genotype I: 0.5 Genotype 2/3: 0.5		1 No treatment 2 Treat IDU 3 Treat ex/non-IDU	health service system	Mathematical model	mild/moderate		50 years	6M	0.035	Hepatology. 2012 Jan;55(1):49-57. doi: 10.1002/hep.24656. Epub 2011 Dec 6.

*R 再治療

*CH Stage: 慢性肝炎を複数の健康状態に分割しているもの： Mild/Moderate: Mild CH/Moderate CH　　Fibrosis: F0/F1/F2/F3

**Decomp Cirrrhosis: 非代償性肝硬変における腹水（ASC）、消化管出血(VH)、肝性脳症(HE)に分類を行っているもの

*** Sim. Cycle: Markov シミュレーションにおける 1 回のサイクルの期間

表 2-1　C 型慢性肝炎の医療経済評価における自然歴　遷移確率(1)

Transition Before→After	N	Mean	SD	Min	Max	Reference#
Chronic hepatitis						
→Compensated cirrhosis						
	15	0.060	0.026	0.010	0.100	2*1,4,5,22,25,26,27,32,36,42,45,51,53
→Hepatocellular carcinoma						
	5	0.007	0.008	0.001	0.016	7,32,36,42,45
Mild Chronic hepatitis						
→Moderate Chronic hepatitis						
	28	0.039	0.014	0.015	0.081	1,6,8,12,13,14,18,20,23,30,31,33,37*2,39,43,48,49*3,50,54
Moderate Chronic hepatitis						
→Compensated cirrhosis						
	29	0.073	0.057	0.021	0.301	1,6,8,12,13,14,18,20,23,30,33,37*2,43,44*4,49*3,50,54
Compensated cirrhosis						
→Decompensated cirrhosis						
	25	0.041	0.009	0.029	0.085	2,4,5,7,13,14,17,22,26,27,33,34,35,37,39,40,41,42,43,45,46,47,51,52,53,54
→Hepatocellular Carcinoma						
	39	0.019	0.014	0.014	0.083	1,4,5,6,7,8,12,14,17,18,20,22,24,25,26,27,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,50,51,52,54
Decompesanted cirrhosis						
→Hepatocellular carcinoma						
	22	0.024	0.021	0.006	0.083	2,5,7,13,22,26,27,33,34,35,37,39,40,41,42,43,44,45,46,47,52,54
→Death						
	24	0.142	0.053	0.013	0.306	2,5,7,14,17,22,26,27,33,34,35,37,39,40,41,42,43,45,46,47,51,52,53,54
Ascites						
→diuretic-reflactory ascites						
	4	0.067	0.000	0.067	0.067	1,18,32,48
→Hepatocellular carcinoma						
	1	0.079	0.000	0.079	0.079	23
→Liver transplantation						
	4	0.031	0.000	0.031	0.031	6,18,32,36
→Death						
	9	0.181	0.201	0.110	0.750	1,18,23,24,25,32,38,44,48
→Death (first year)						
	2	0.110	0.000	0.110	0.110	6,36
→Death (subsequent years)						
	2	0.330	0.000	0.330	0.330	6,36

The number is same number of reference list

*1 included 3 cases: aggressive disease, indolent disease, overall

*2 included 5 cases: age 25 at infection 50% genotype 1 60% male, age 25 at infection 100% genotype non-1 100% male, age 25 at infection 100% genotype non-1 100% female, age 50 at infection 100% genotype non-1 100% male, age 50 at infection 100% genotype non-1 100% female

*3 included 6 cases: genotype 1 30 years old, genotype 1 40 years old, genotype 1 50 years old, genotype non-1 30 years old , genotype non-1 40 years old, genotype non-1 50 years old.

*4 included 4 male cases: age 40, age50, age60, and ≧age 70

表 2-2　C 型慢性肝炎の医療経済評価における自然歴　遷移確率(2)

Transition Before→After	N	Mean	SD	Min	Max	Reference#
Variceal hemorrhage						
→Liver transplantation	4	0.031	0.000	0.031	0.031	6,18,32,36
→Death	1	0.750	0.000	0.750	0.750	25
→Hepatocellular carcinoma	1	0.079	0.000	0.079	0.079	23
Variceal hemorrhage (first year)						
→Liver transplantation	2	0.031	0.000	0.031	0.031	12,31
→Death	16	0.400	0.000	0.400	0.400	1,6,8,12,18,20,23,24,30,31,32,36,38,44,48,50
Variceal hemorrhage (subsequent years)						
→Liver transplantation	2	0.031	0.000	0.031	0.031	12,31
→Death	16	0.130	0.000	0.130	0.130	1,6,8,12,18,20,23,24,30,31,32,36,38,44,48,50
Hepatic encephalopathy						
→Hepatocellular carcinoma	1	0.079	0.000	0.079	0.079	23
→Liver transplantation	4	0.031	0.000	0.031	0.031	6,18,32,36
→Death (first year)	4	0.680	0.000	0.680	0.680	6,18,36,48
→Death (subsequent years)	4	0.400	0.000	0.400	0.400	6,18,36,48
Hepatic encephalopathy (first year)						
→Liver transplantation	2	0.031	0.000	0.031	0.031	12,31
→Death	13	0.685	0.019	0.680	0.750	1,8,12,20,23,24,25,30,31,32,38,44,50
Hepatic encephalopathy (subsequent years)						
→Liver transplantation	2	0.031	0	0.031	0.031	12,31
→Death	12	0.37	0.099499	0.04	0.4	1,8,12,20,23,24,30,31,32,38,44,50
Hepatocellular carcinoma						
→Death	36	0.576	0.216	0.194	0.860	1,2,5,6,8,12,14,17,18,20,22,23,24,25,26,27,30,31,33,36,37,38,39,40,41,42,43,44,45,46,47,48,50,51,53,54

The number is same number of reference list

表3　C型慢性肝炎の医療経済評価における効用値

Heatlth State	N	Utility				Reference[#]
		Mean	SD	Min	Max	
Post-SVR	10	0.93	0.10	0.72	1.00	4,6,12,18,33,39,40,42,45,54
Chronic hepatitis	11	0.86	0.07	0.72	0.94	7,11,26,27,36,39,41,42,45,51,53
Mild chronic hepatitis	18	0.88	0.09	0.73	0.98	1,6,8,12,15,17,18,24,28,30,31,33,39,40,48,49,50,54
Moderate chronic hepatitis	17	0.84	0.10	0.66	0.92	1,6,8,12,15,17,18,24,30,31,33,39,40,44,48,50,54
Compensated cirrhosis	29	0.77	0.10	0.55	0.89	1,4,6,7,8,11,12,15,17,18,24,26,27,30,31,33,36,39,40,41,42,44,45,48,50,51,52,53,54
Decompensated cirrhosis	12	0.64	0.13	0.45	0.81	26,27,30,33,39,40,41,42,45,51,53,54
Ascites	8	0.56	0.20	0.31	0.81	1,6,17,18,24,36,44,48
Diuretic-refractory	6	0.49	0.20	0.20	0.81	8,11,12,15,31,48
Diuretic-sensitive	5	0.63	0.20	0.35	0.81	8,11,12,15,31
Hepatic encephalopathy	11	0.47	0.18	0.20	0.81	1,6,8,11,15,17,18,24,36,44,48
(1st Year)	2	0.56	0.36	0.30	0.81	12,31
(Subsequent years)	2	0.56	0.36	0.30	0.81	12,31
Variceal Haemorrhage	9	0.46	0.15	0.25	0.60	1,6,8,15,17,18,24,44,48
(1st Year)	3	0.53	0.27	0.28	0.81	11,12,31
(Subsequent years)	3	0.56	0.27	0.28	0.81	11,12,31
Hepatocellular carcinoma	27	0.47	0.24	0.09	0.81	4,6,7,8,11,12,15,17,18,24,26,27,31,33,36,39,40,41,42,44,45,48,50,51,52,53,54
Liver transplantation	10	0.75	0.17	0.45	0.86	8,17,24,30,33,44,45,50,53,54
(1st Year)	15	0.60	0.16	0.45	0.86	1,6,7,11,12,18,26,27,31,36,39,40,41,48,51
(Subsequent years)	15	0.75	0.08	0.62	0.90	1,6,7,11,12,18,26,27,31,36,39,40,41,48,51

[#]The number is same number of reference list

表4-1　C 型慢性肝炎治療の医療経済評価結果一覧（1）

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
1	Bennett WG	1997	lifelong	Discount(5%)	35		No treatment(Standard care)	US$	5,406	16.20	-	-	-	-
							IFN-α-2b 24W		5,899	16.40	-	No treatment	1,900	-
				Not discounted	35		IFN-α-2b 24W	US$	16,437	37.70	31.70	-	-	-
							No treatment(Standard care)		19,904	36.20	28.00	-	Dominated	Dominated
2	Kim WR	1997	lifelong		40		No treatment	US$	24,600	-	-	-	-	-
							IFN-α 6M		25,600	-	+0.25	No treatment	-	4,000
							IFN-α 12 M		26,500	-	+0.37	No treatment	-	5,000
3	Davis GL	1998	lifelong	Discount(3%)	35		No treatment	US$	8,193	21.29	16.70	-	-	-
							IFN-α-2b 6 M		8,802	21.61	17.68	No treatment	1,903	621
							IFN-α-2b 18M		9,925	22.01	18.96	No treatment	2,406	766
				Not discounted	35		No treatment	US$	18,855	36.23	28.03	-	-	-
							IFN-α-2b 6 M		17,748	37.16	30.16	No treatment	Dominated	Dominated
							IFN-α-2b 18M		16,630	38.33	32.97	No treatment	Dominated	Dominated
4	Shiell A	1999	lifelong over 30 years	Discounted(3%)	40		IFN-α 6M additional to No treatment (1000patients)	US$	1,800,380	94.20	320.10	-	-	-
							IFN-α 12 M additional to No treatment(1000patients)		3,209,345	183.20	490.90	IFN-α 6M	15,835	8,250
				Discounted(5%)	40		IFN-α 6M additional to No treatment (1000patients)	US$	2,049,645	63.90	237.70	-	-	-
							IFN-α 12 M additional to No treatment(1000patients)		3,694,020	124.20	359.50	IFN-α 6M	27,265	13,505
				Undiscounted	40		IFN-α 6M additional to No treatment (1000patients)	US$	1,185,555	176.30	531.40	-	-	-
							IFN-α 12 M additional to No treatment(1000patients)		2,013,845	342.70	830.70	IFN-α 6M	4,975	2,765
5	Younossi ZM	1999	lifelong		45		IFN/CMB: IFNα-2b 24W + IFNα2b+RBV 24W for noreponder or relapser	US$	34,561	-	15.53	-	-	-
							CMB-G: IFNα2b+RBV 24 for non-G1 + 48W for G1		37,263	-	15.89	IFN/CMB	-	7,500
							IFN/CMB-R: IFN α2b for 48W + IFN α2b +RBV 24W for relapser		34,758	-	14.40	-	-	Dominated
							CMB: IFNα2b+RBV 24W		34,792	-	15.31	-	-	Dominated
							IFN: FNα2b for 48W		35,642	-	14.05	-	-	Dominated
							No treatment		38,747	-	13.01	-	-	Dominated
6	Buti M	2000	lifelong	Mild Discounted(3%)	40		IFN α-2b +RBV 6M	€Euro	-	-	-	-	-	-
							IFN α-2b +RBV 12M		-	+0.1	+0.5	IFN α +RBV 6M	29,914	8,316
				Moderate Discounted(3%)	40		IFN α-2b +RBV 6M	€Euro	-					
							IFN α-2b +RBV 12M		-	+0.4	+0.7	IFN α +RBV 6M	8,316	4,004
				Mild Discounted(3%)	40		IFN α-2b 12M	€Euro	-					
							IFN α-2b +RBV 12M		-	+0.3	+1.4	IFN12	15,741	4,001
				Moderate Discounted(3%)	40		IFN α-2b 12M	€Euro	-					
							IFN α-2b +RBV 12M		-	+1.1	+2.2	IFN α 12M	3,739	1,800
7	Sinha M	2000	lifelong		10		IFN 12M	US$	44,508	-	25.11	-	-	
							IFN 6M		49,588	-	24.60	IFN 12M	-	Dominated
							No treatment		76,735	-	22.33	IFN 6M	-	Dominated
8	Wong JB	2000	lifelong	Discount	40.1	65.4	No treatment	US$	8,237	-	19.00	-	-	-
							watchful waiting and treat patients with moderate cirrhosis		14,954	-	19.60	immediate empirical combination therapy	-	Ext. Dominated
							immediate empirical combination therapy		15,238	-	20.10	No treatment	-	7,000
							watchful waiting and treat patients with cirrhosis		17,167	-	19.10	immediate empirical combination therapy	-	Dominated
				Not discount	40.1	65.4	no treatment	US$	17,714	32.70	30.70	-	-	-
							immediate empirical combination therapy		21,073	34.30	33.10	No treatment	9,484	1,400
							watchful waiting and treat patients with moderate cirrhosis		26,249	33.90	32.10	immediate empirical combination therapy	Dominated	Dominated
							watchful waiting and treat patients with cirrhosis		33,288	33.00	30.90	immediate empirical combination therapy	Dominated	Dominated

表4-2　C型慢性肝炎治療の医療経済評価結果一覧(2)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
9	Wong JB	2000	lifelong	Discounted(3%)	42.8	65.6	IFN α-2b 48 w	US$	15,000	-	15.40	-	-	-
							IFN α-2b 24 w		16,700		14.50	IFNα-2b 48 w		Dominated
							IFNα-2b +RBV 24 w		18,300	-	16.00	IFN α-2b 48 w	-	55,500
							IFN α-2b +RBV 48 w		20,900	-	16.40	IFNα-2b 48 w	-	35,900
				Discounted(5%)	42.8	65.6	IFNα-2b 48 w	US$	11,400	-	12.10	-	-	-
							IFNα-2b 24 w		12,400	-	11.60	IFNα-2b 48 w	-	Dominated
							IFNα-2b + RBV 24 w		15,500	-	12.50	IFNα-2b 48 w	-	67,250
							IFN α-2b +RBV 48 w		18,300	-	12.80	IFN α-2b 48 w	-	42,429
				Not discount	42.8	65.6	IFN α-2b 48 w	US$	25,800	28.20	24.30	-	-	-
							IFN α-2b + RBV 24 w		27,000	29.30	25.60	IFNα-2b 48 w	-	3,539
							IFN α-2b + RBV 48 w		28,600	30.00	26.60	IFNα-2b 48 w	-	3,399
							IFN α-2b 24 w		29,700	26.60	22.30	IFNα-2b 48 w	-	Dominated
10	Wong JB	2000	lifelong	Discounted 3%	44	0.65	IFNα-2b Monotherapy 6M	US$	14,200	-	14.70	-	-	-
							IFNα-2b + RBV 6M		14,500	-	16.70	IFN Monotherapy		150
				Discounted 5%	44	0.65	IFNα-2b Monotherapy 6M	US$	10,600	-	11.70	-	-	-
							IFNα-2b + RBV 6M		12,500	-	13.00	IFN Monotherapy	-	1,462
				Not discounted	44	0.65	IFNα-2b + RBV 6M	US$	20,200	30.10	26.90	-	-	-
							IFNα-2b 6M		25,000	26.80	22.70	-	-	Dominated
11	Sagmeister M	2001	lifelong	Genotype 1 Discounted 3%	42.2	65.1	No treatment	€Euro	15,143	-	15.32	-	-	-
							IFNα-2b Monotherapy		16,631	-	15.62	No treatment	-	4,886
							IFNα-2b 3MIU+RBV 24W		21,074	-	15.95	-	-	Dominated
							IFNα-2b 3MIU+RBV 24W(Virological responder at 24W) plus 24W		22,467	-	16.44	IFN Monotherapy	-	7,135
							IFNα-2b 3MIU+RBV 48W		26,268	-	16.39	-	-	Dominated
				Genotype 1 Not discounted	42.2	65.1	No treatment	€Euro	28,383	29.09	23.74	-	-	-
							IFNα-2b Monotherapy		28,852	29.80	24.51	-	-	-
							IFNα-2b 3MIU+RBV 24W(Virological responder at 24W) plus 24W		32,154	31.61	26.53	-	-	-
							IFNα-2b 3MIU+RBV 24W		32,238	30.56	25.35	-	-	-
							IFNα-2b 3MIU+RBV 48W		35,994	31.66	26.51	-	-	-
				Non-genotype 1 Discounted 3%	42.2	65.1	IFNα-2b 3MIU+RBV 24W	€Euro	14,427	-	17.99	-	-	-
							IFNα-2b Monotherapy		14,665	-	16.48	-	-	Dominated
							No treatment		15,143	-	15.32	-	-	Dominated
							IFNα-2b 3MIU+RBV 48W		19,620	-	17.87	-	-	Dominated
							IFNα-2b 3MIU+RBV 24W(Virological responder at 24W) plus 24W		21,533	-	17.88	-	-	Dominated
				Non-genotype 1 Not discounted	42.2	65.1	IFNα-2b 3MIU+RBV 24W	€Euro	19,673	34.45	29.96	-	-	-
							IFNα-2b Monotherapy		24,304	31.52	29.51	-	-	-
							IFNα-2b 3MIU+RBV 24W(Virological responder at 24W) plus 24W		25,146	34.41	29.80	-	-	-
							IFNα-2b 3MIU+RBV 48W		26,970	34.50	29.87	-	-	-
							No treatment		28,383	29.09	23.74	-	-	-

表4-3　C型慢性肝炎治療の医療経済評価結果一覧(3)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
12	Sennfält K	2001	lifelong	Genotype 1 Discounted 3%	43		IFNα-2b +RBV 24W	US$	-	-	-	IFN +RBV 48W	6,800	1,400
									-	-	-	No treatment	16,300	5,900
							IFNα-2b +RBV 48W	US$	-	-	-	IFN Monotherapy 48W	21,900	6,000
									-	-	-	No treatment	20,700	7,300
									-	-	-	IFN +RBV 24W	29,500	9,800
				Genotype 1 Not discounted	43		IFNα-2b +RBV 24W	US$	-	-	-	IFN +RBV 48W	Cost Saving	Cost Saving
									-	-	-	No treatment	4,800	2,300
							IFNα-2b +RBV 48W	US$	-	-	-	IFN Monotherapy 48W	3,800	1,700
									-	-	-	No treatment	5,700	2,600
									-	-	-	IFN +RBV 24W	7,300	3,100
13	Grieve R	2002	lifelong	Mild CH	40		No treatment	€Euro	18,346	-	26.40	-	-	-
							Treatment (IFNα-2b +RBV) 48W		33,228	+1.2	28.20	No treatment	12,089.00	8,490
14	Kuehne FC		lifelong	Discounted Coinfected Patients With CD4 Cell Counts of 350 Cells/μL and Moderate Chronic HCV, Genotype 1	35		No treatment	US$	139,000	9.72	6.98	-	-	-
							IFNα-2b 48 W		141,600	9.81	7.11	-	Extended Dom	Extended Dominance
							IFNα -2b+RBV 24W		143,700	9.90	7.26	-	Extended Dom	Extended Dominance
							IFN-α +RBV 48W		144,900	10.04	7.49	No treatment	18,500	11,600
							PegIFN-α(2a/2b)48W		145,000	9.88	7.23	-	Dominated	Dominated
							PegIFN-α(2a/2b) +RBV 48W		150,400	10.13	7.63	IFN-α +RBV 48W	65,100	40,000
				Discounted Coinfected Patients With CD4 Cell Counts of 200 Cells/μL and Moderate Chronic HCV, Genotype 1	35		No treatment	US$	43,000	3.24	2.25	-	-	-
							IFN-α 48 W		45,600	3.25	2.27	-	Extended Dom	Extended Dominance
							IFN-α +RBV 24W		47,900	3.26	2.29	-	Extended Dom	Extended Dominance
							IFN-α +RBV 48W		48,800	3.25	2.28	-	Dominated	Dominated
							PegIFN-α 48W		49,100	3.27	2.32	No treatment	184,200	85,900
							PegIFN-α +RBV 48W		54,100	3.28	2.34	PegIFN-α 48W	594,800	267,200
15	Stein K	2002	lifelong		40	100	No treatment	£ Ponds	13,729	-	22.80	-	-	-
							IFNα-2b Monotherapy		14,363	-	24.70	-	-	-
							IFNα-2b+Ribavirin		14,456	-	27.60	No treatment	-	151
												IFNα-2b Monotherapy		32
16	Buti M	2003	lifelong	all base-case patients	43	100	IFNα-2b + RBV 48W	€Euro	18,410	18.91	16.29	-	-	-
							PegIFNα-2b + RBV800 48W		20,365	19.14	16.81	IFN + R	8,501	3,761
							PegIFNα-2b+ RAB 48W		21,057	19.37	17.33	Peg + R800	3,008	1,330
							PegIFNα-2b+ RAB + Compliant		19,757	19.73	18.16	Peg + RAB	Cost Saving	Cost Saving
				genotype 1 base-case patients	43	100	IFNα-2b + RBV 48W	€Euro	20,063	18.45	15.24	-	-	-
							PegIFNα-2b + RBV800 48W		21,783	18.75	15.91	IFN + R	5,730	2,566
							PegIFNα-2b+ RAB 48W		22,593	18.94	16.36	Peg + R800	4,263	1,800
							PegIFNα-2b+ RAB + Compliant		20,821	19.44	17.48	Peg + RAB	Cost Saving	Cost Saving
17	Salomon JA	2003	lifelong	all genotypes, and both sexes	40		No treatment	US$	8,200	-	18.85		-	-
							IFNα-2b Monotherapy		10,200	-	18.94	No treatment	-	Extended Dominance
							PegIFNα-2b		13,300	-	19.09	Interferon	-	21,000
							IFNα-2b + RBV		17,700	-	19.28	Pegylated interferon	-	24,000
							PegIFNα-2b + RBV800 48W		22,000	-	19.40	Interferon and rivavirin	-	35,000

表4-4　C 型慢性肝炎治療の医療経済評価結果一覧(4)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
18	San Miguel R	2003	lifelong	mild hepatitis 0.21 moderate hepatitis 0.66 compensated cirrhosis 0.13	42	100	No treatment	€Euro	13,159	16.97	10.89	-	-	-
							IFNα-2(a/b) Monotherapy		14,760	17.05	11.04	No treatment	20,011(Ex Dom)	10,673(Ex Dom)
							Combination therapy for 6M with standard doses of IFNα-2(a/b)		17,771	17.46	11.83	IFN Monotherapy	7,345(Ex Dom)	3,811(Ex Dom)
							Combination therapy for 6M with high doses of IFNα-2(a/b)		18,453	17.54	11.99	Combination therapy for 6M with standard doses of IFN	8,525	4,262
							combination therapy for 12M with standard doses of IFNα-2(a/b)		22,573	17.77	12.44	Combination therapy for 6M with high doses of IFN	17,913	9,155
19	Siebert U	2003	lifelong	Discounted 3%	NS		No antiviral therapy	€Euro	14,800	17.97	16.07	-	-	-
							IFN α-2(a/b) monotherapy 48W		17,600	18.45	16.60	No treatment	5,800	5,300
							IFNα-2(a/b) + RBV 48W 48W		26,600	19.19	17.38	Interferon monotherapy	Extended Dominance	Extended Dominance
							PegIFNα-2(a/b) +RBV 48W		32,500	19.90	18.13	Interferon monotherapy	10,300	9,800
20	Siebert U	2003	lifelong	Discounted 3%	44		No antiviral treatment	€Euro	14,100	17.00	15.10	-	-	-
							IFN α-2b +RBV 48W		19,300	18.60	16.80	No antiviral treatment	3,250	3,059
							PegIFN α-2b + fixed RBV 48W		21,800	18.80	17.00	IFN +RBV	Extended Dominance	Extended Dominance
						66	PegIFN α-2b + weight based RBV 48W		22,400	19.10	17.30	PegIFN plus fixed RBV	2,000	2,000
21	Wong JB	2003	lifelong	ALL/12Week-PCR checked	44	66	IFN α-2b+Ribavirin	US$	-	-	-	No treatment	-	1,500
							PegIFN α-2b +RBV 800mg		-	-	-	No treatment	-	4,400
							PegIFN α-2b +weight-based RBV		-	-	-	No treatment	-	4,300
							PegIFN α-2b +RBV 800mg		-	-	-	IFN+Ribavirin	-	22,800
							PegIFN α-2b +weight-based RBV		-	-	-	IFN+Ribavirin	-	13,600
							PegIFN α-2b +weight-based RBV					PegIFN α-2b +RBV 800mg		3,900
22	Annemans L	2004	25 Years	Monotherapy in all genotypes	NS		IFN α-2a	€Euro	13,144	-	12.59	-	-	-
							PegIFN α-2a		17,589	-	13.56	IFN α-2a	-	4,569
				Combination therapy GT 1-4-5-6	NS		IFN α-2a +RBV		17,351	-	13.37	-	-	-
							PegIFN α-2a +RBV		24,274	-	13.84	IFN α-2a +RBV	-	14,763
				Combination therapy GT 2-3	NS		IFN α-2a +RBV		10,909	-	14.54	-	-	-
							PegIFN α-2a +RBV		11,679	-	15.37	IFN α-2a +RBV	-	903
23	Ishida H	2004	lifelong	ALL patients not discounted	49.6	69	IFN α-2b +RBV	JPN ¥	6,325,000	-	20.20	-	-	-
							IFN α-2b		6,734,000	-	17.10	IFN α-2b +RBV	-	Dominated
				ALL patients discount3%	49.6	69	IFN α-2b +RBV		4,871,000	-	13.37	-	-	-
							IFN α-2b		4,992,000	-	11.73	IFN α-2b +RBV	-	Dominated
				ALL patients discount5%	49.6	69	IFN α-2b		4,296,000	-	9.57	-	-	-
							IFN α-2b +RBV		4,301,000	-	10.71	IFN α-2b	-	4,530
				Genotype 1b and high viral load not discount	49.6	69	IFN α-2b		7,075,000	-	16.17	-	-	-
							IFN α-2b +RBV		7,095,000	-	18.02	IFN α-2b	-	11,000
				Genotype 1b and high viral load discount3%	49.6	69	IFN α-2b		5,210,000	-	11.26	-	-	-
							IFN α-2b +RBV		5,390,000	-	12.22	IFN α-2b	-	187,000
				Genotype 1b and high viral load discount5%	49.6	69	IFN α-2b		4,465,000	-	9.25	-	-	-
							IFN α-2b +RBV		4,717,000	-	9.91	IFN α-2b	-	377,000

表4-5　C型慢性肝炎治療の医療経済評価結果一覧(5)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
24	Salomon JA	2004	lifelong	Discounted 3%	NS		No treatment	US$	13,100	-	17.81	-	-	-
							Deferred treatment		19,600	-	18.49	No treatment	-	9,500
							Immediate treatment		20,900	-	18.47	Deferred treatment	-	Dominated
				Not Discounted	NS		No treatment	US$	31,700	-	28.56	-	-	-
							Deferred treatment		32,500	-	30.41	No treatment	-	400
							Immediate treatment		33,700	-	30.42	Deferred treatment	-	129,000
25	Shepherd J	2004	30 years	Discounted	36		No treatment	US$	2,054	-	21.464		-	-
							Dual treatment (IFN α-2a/b + RBV)		9,988	-	23.098	No treatment	-	4,855
							Dual treatment (PEG(IFN α-2a/b + RBV)		13,863	-	23.417	Dual treatment (IFN + RBV)	-	12,149
26	Sullivan SD	2004	lifelong	Chronic hepatitis	45	100	IFN α-2b+RBV	€Euro	-	28.75	-	-	-	-
							PegIFN α-2a+RBV		-	29.53	-	IFN α-2b+RBV	9,433	10,894
27	Sullivan SD	2004	lifelong	CHC without cirrhosis Genotype 1	45	100	IFN α-2b + Ribavirin	US$	-	29.23	-		-	
							PegIFN α-2a + Ribavirin		-	+0.78	`+0.70	IFN α-b + RBV	-	2,600
				CHC without cirrhosis Genotype 2/3			IFN α-2b + Ribavirin		-	-	-	-	-	-
							PegIFN α-2a + Ribavirin		-	+1.17	`+1.05	IFN α-b + RBV	-	-
28	Shepherd J.	2005	30 Year(s)	All	36		IFNα-2b +RBV	£ Ponds	9,988	-	23.10		-	
							PegIFNα-2a/b +RBV		13,863	-	23.42	IFN+RBV	-	12,123
				Genotype 1	36		IFNα-2b +RBV	£ Ponds	10,193	-	22.74		-	
							PegIFNα-2a/b+RBV		14,046	-	23.10	IFN+RBV	-	10,848
				Genotype 2/3 (Fried data base)	36		IFNα-2b +RBV	£ Ponds	9,679	-	23.63		-	
							PegIFNα-2a/b+RBV		13,436	-	24.16	IFN+RBV	-	7,051
				Genotype 2/3 (Manns data base)	36		IFNα-2b +RBV	£ Ponds	9,310	-	24.27		-	
							PegIFNα-2a/b+RBV		13,314	-	24.38	IFN+RBV	-	37,578
				Genotype 4/5/6	36		IFNα-2b +RBV	£ Ponds	10,152	-	22.81		-	
							PegIFNα-2a/b+RBV		13,965	-	23.24	IFN+RBV	-	8,946
29	Siebert U	2005	20 Year(s)	Discount 3%	NS		No antiviral therapy	€Euro	14,800	17.97	16.07	-	-	-
							IFNα-2a/b		17,600	18.45	16.60	No antiviral therapy	5,800	5,300
							IFNα-2a/b+RBV		26,600	19.19	17.38	IFN monotherapy	12,300	11,600
							pegIFNα-2a/b+RBV		32,500	19.90	18.13	IFN monotherapy	10,300	9,800
30	Siebert U	2005	lifelong	Discounted 3% per year	NS		No treatment	€Euro	13,093	18.20	16.26	-	-	-
							IFN α-2b 48 weeks		14,410	18.72	16.82	No treatment	2,557	2,365
							IFNα-2b+RBV 24 weeks		18,187	19.36	17.51	IFN 48 weeks	5,874	5,460
							IFNα-2b+RBV 48 weeks		21,057	19.65	17.80	IFN+RBV 24 weeks	9,816	9,757
				Not discount	NS		IFN 48 weeks	€Euro	23,793	29.86	26.78	-	-	-
							No treatment		24,027	28.59	25.45	-	Dominated	Dominated
							IFNα-2b+RBV 24 weeks		25,631	31.43	28.42	IFN 48 weeks	1,167	1,118
							IFNα-2b+RBV 48 weeks		27,712	32.14	29.12	IFN+RBV 24 weeks	2,946	2,949
31	Bernfort L	2006	lifelong	Genotype 1	43		PegIFNα-2b + Ribavirin	€Euro	29,722	20.18	19.02	-	-	
							IFNα-2b+Ribavirin		29,926	19.93	18.73	PegIFN + Ribavirin	Dominated	Dominated
				Genotype 2/3	43		IFNα-2b+Ribavirin	€Euro	19,260	21.30	20.55	-	-	-
							PegIFNα-2b + Ribavirin		20,201	21.41	20.64	IFN+Ribavirin	8,555	10,500
32	García-Contreras F	2006	45 years		30.00		PegIFNα-2a +RBV+ thymosin	US$	73,900	-	39.00	-	-	Dominate
							PegIFN α-2a+RBV		74,934		33.00	PegIFN +RBV+ thymosin	-	Dominated
							PegIFNα-2a		84,601		29.00	PegIFN +RBV	-	Dominated
							No treatment		95,074		23.00	PegIFN	-	Dominated

表4-6　C型慢性肝炎治療の医療経済評価結果一覧(6)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
33	Grieve R	2006	lifelong (up to 50 years)	Mild CH Genotype 1	40	60	MiidCH:No treatment → ModerateCH:IFN α-2b+RBV	£ Ponds	10,472		14.99	-	-	-
							MiidCH:No treatment →ModerateCH:PegIFN α-2b+RBV		11,581		15.03	Miid disase:No treatment ; Moderate disease:IFN α-2b+RBV	-	27,725
							MiidCH:IFN α-2b+RBV→ModerateCH:No treatment		14,883		15.17	Miid disase:No treatment ; Moderate disease:PegIFN α-2b+RBV	-	23,586
							MiidCH:PegIFN α-2b+RBV→ ModerateCH:No treatment		18,897		15.29	Miid disase:IFN α-2b+RBV ; Moderate disease:No treatment	-	33,450
				Mild CH Genotype non-1	40	60	MiidCH:No treatment → ModerateCH:IFN α-2b+RBV	£ Ponds	8,561		15.18	-	-	-
							MiidCH:No treatment→ ModerateCH:PegIFN α-2b+RBV		9,630		15.21	Miid disase:No treatment ; Moderate disease:IFN α-2b+RBV	-	35,633
							MiidCH:IFN α-2b+RBV→ ModerateCH:No treatment		11,343		15.79	Miid disase:No treatment ; Moderate disease:PegIFN α-2b+RBV	-	2,953
							MiidCH:PegIFN α-2b+RBV→ ModerateCH:No treatment		15,084		15.91	Miid disase:IFN α-2b+RBV ; Moderate disease:No treatment	-	31,175
34	Hornberger J	2006	30 Year(s)	Genotype 1	45		No treatment	€Euro	6,990	32.50	16.00	-	-	-
							PegIFN α-2a+RBV for Genotype 1		19,509	33.20	16.80	No treatment	19,733	16,831
				Genotype 2/3	45		No treatment	€Euro	6,990	32.50	16.10	-	-	-
							PegIFN α-2a+RBV for Genotype 2/3		11,007	33.70	17.40	No treatment	3,525	3,000
35	Hornberger J	2006	lifelong	Combined	40	81	No treatment	US$	35,474	22.25	11.53	-	-	-
							Interferon α+RBV		38,579	22.90	11.90	No treatment	4,777	8,392
							Peginterferon α-2a+RBV		40,661	24.40	12.90	Interferon α/RBV	1,388	2,082
				Genotype 1	40	81	No treatment	US$	35,474	22.25	11.53	-	-	-
							Interferon α+RBV		38,613	22.61	11.74	No treatment	8,719	14,948
							Peginterferon α-2a+RBV		43,042	23.74	12.47	Interferon α/RBV	3,919	6,067
				Genotype 2/3	40	81	No treatment	US$	35,474	22.25	11.53	-	-	-
							Peginterferon α-2a+RBV		37,089	25.44	13.63	No treatment	506	769
							Interferon α/RBV		38,528	23.29	12.19	Peginterferon α-2a /RBV	Dominated	Dominated
36	Lin WA	2006	lifelong		45		PegIFNα-2b+RBV 24 w without Genotyeping	US$	10,648	-	29.20	-	-	-
							Genotype1: PegIFNα-2b 24w & genotype non1:IFN 24w		11,463	-	28.30	PegIFN+RBV 24 w without Genotyeping	-	Dominated
							Genotype1:PegIFNα-2b 48w & genotype non1: PegIFN 24w		14,579	-	29.10	Genotype1: PegIFN 24w & genotype non1: IFN 24w		3,895
37	Wright M	2006	lifelong	Genotype 1:50% non-1 50%	40	60	No treatment	£ Ponds	9,552	20.44	15.09	-	-	-
							IFN α-2b +RBV		13,199	20.47	15.47	No treatment	-	9,535

表4-7　C型慢性肝炎治療の医療経済評価結果一覧(7)

No	Author	Pub Year	Time horizon	Condition	Age	Male (%)	Strategy	Currency	cost	LY	QALY	ICER		
												Comparator	Cost/LY	Cost/QALY
38	Campos NG	2007	lifelong	Genotype 1	44.8	100	No treatment	US$	240,300	11.63	-	-	-	-
							IFNα-2a/b +RBV		256,400	11.71	-	No treatment	extended . dominated	-
							PegIFNα-2a/b		261,100	11.83	-	No treatment	extended . dominated	-
							PegIFNα-2a/b +RBV		271,700	12.06	-	No treatment	73,023	-
						0	No treatment	US$	252,200	12.28	-			-
							IFNα-2a/b +RBV		268,400	12.37	-	No treatment	extended . dominated	-
							PegIFNα-2a/b		273,200	12.48	-	No treatment	extended . dominated	-
							PegIFNα-2a/b +RBV		284,000	12.73	-	No treatment	70,667	-
				Non-Genotype 1	44.8	100	No treatment	US$	240,300	11.63	-			-
							IFNα-2a/b +RBV		257,900	11.88	-	No treatment	extended . dominated	-
							PegIFNα-2a/b		263,400	12.09	-	No treatment	extended . dominated	-
							PegIFNα-2a/b +RBV		275,600	12.52	-	No treatment	39,663	-
						0	No treatment	US$	252,200	12.28	-			-
							IFNα-2a/b +RBV		270,000	12.55	-	No treatment	ext . dominated	-
							PegIFNα-2a/b		275,700	12.76	-	No treatment	ext . dominated	-
							PegIFNα-2a/b +RBV		288,400	13.20	-	No treatment	39,348	-
39	Gerkens S	2007	30 year	Genotype 1/4/5/6	45		Monitor & Treat Moderate CH (METAVIR F2)	€Euro	12,383	-	20.32	-	-	-
							Direct Treat Mild CH		18,046	-	20.56	Monitor & Treat Moderate CH (METAVIR F2)	-	23,046
				Genotype 2/3	45		Monitor & Treat Moderate CH (METAVIR F2)	€Euro	6,981	-	20.73	-	-	-
							Direct Treat Mild CH		9,184	-	21.20	Monitor & Treat Moderate CH (METAVIR F2)	-	4,631
40	Gerkens S	2007	30 years	CH with normal ALT Genotype 1	45	50	No treatment	€Euro	5,760	26.78	16.63	-	-	-
							Treatment (PegIFN α-2a +RBV)		18,958	27.05	19.11	No treatment	48,880	5,333
				CH with Normal ALT Genotype2/3	45	50	No treatment	€Euro	5,760	26.78	16.63	-	-	-
							Treatment (PegIFN α-2a +RBV)		10,016	27.21	20.57	No treatment	9,898	1,080