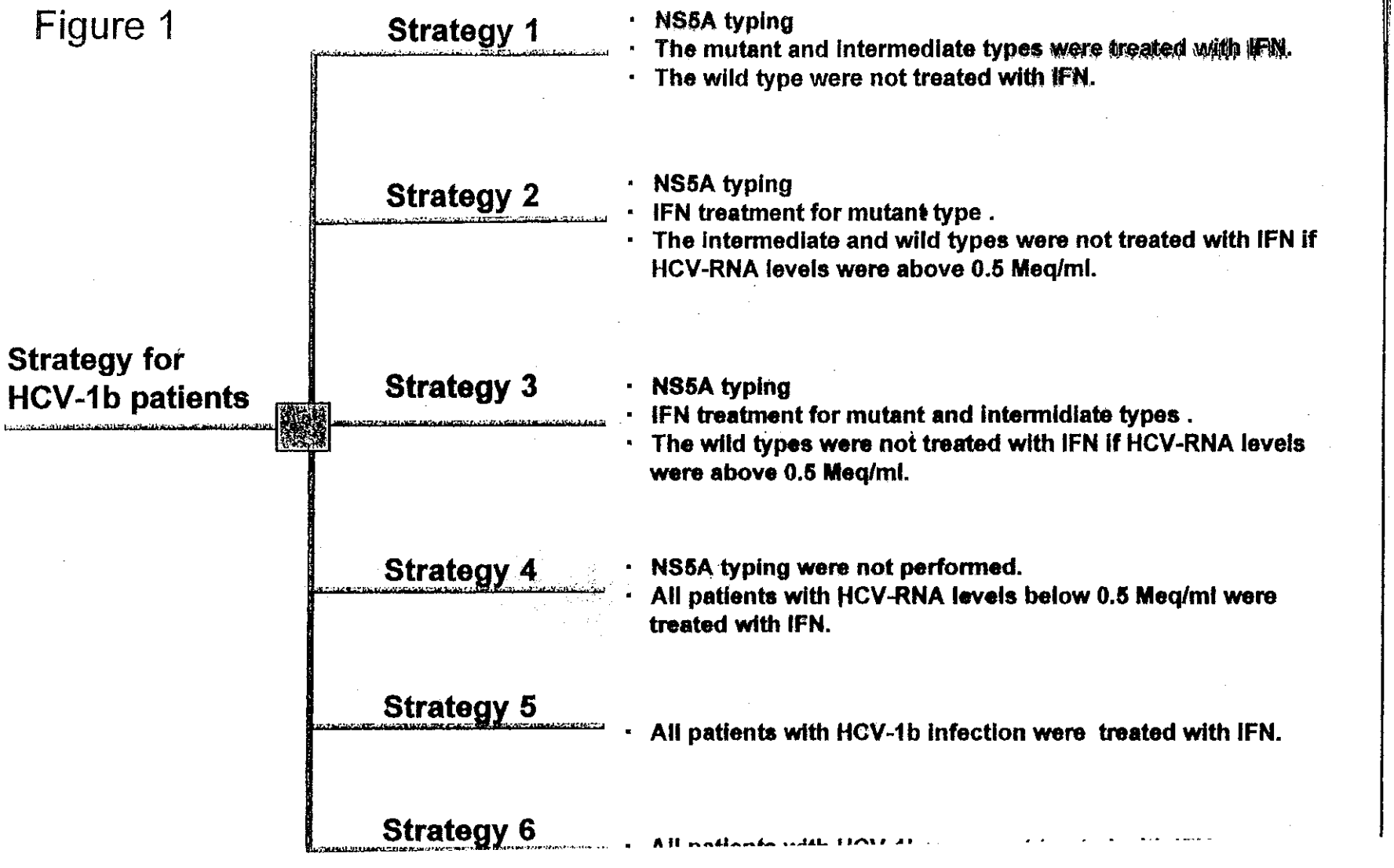
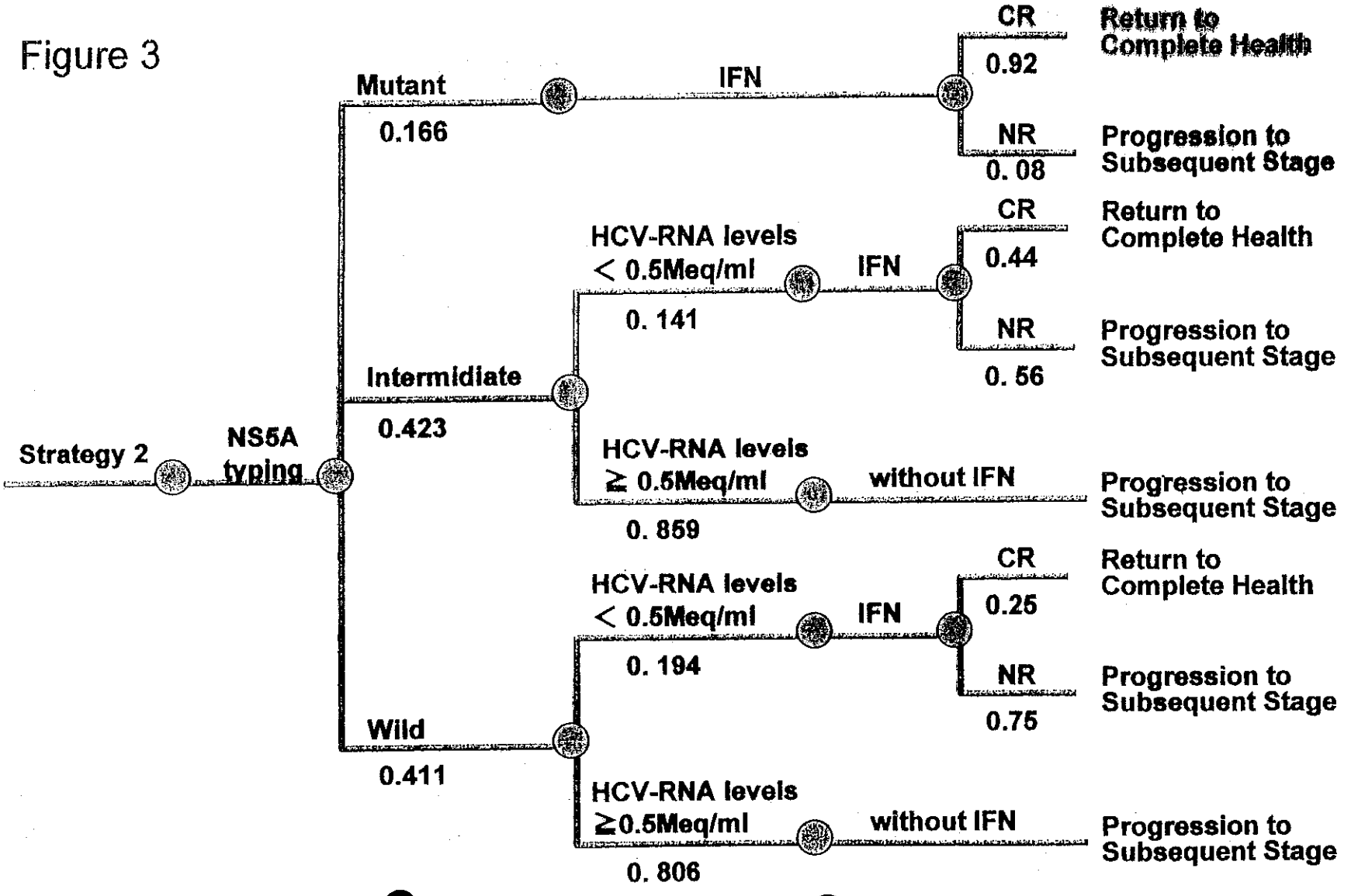
Decision Tree

Figure 1



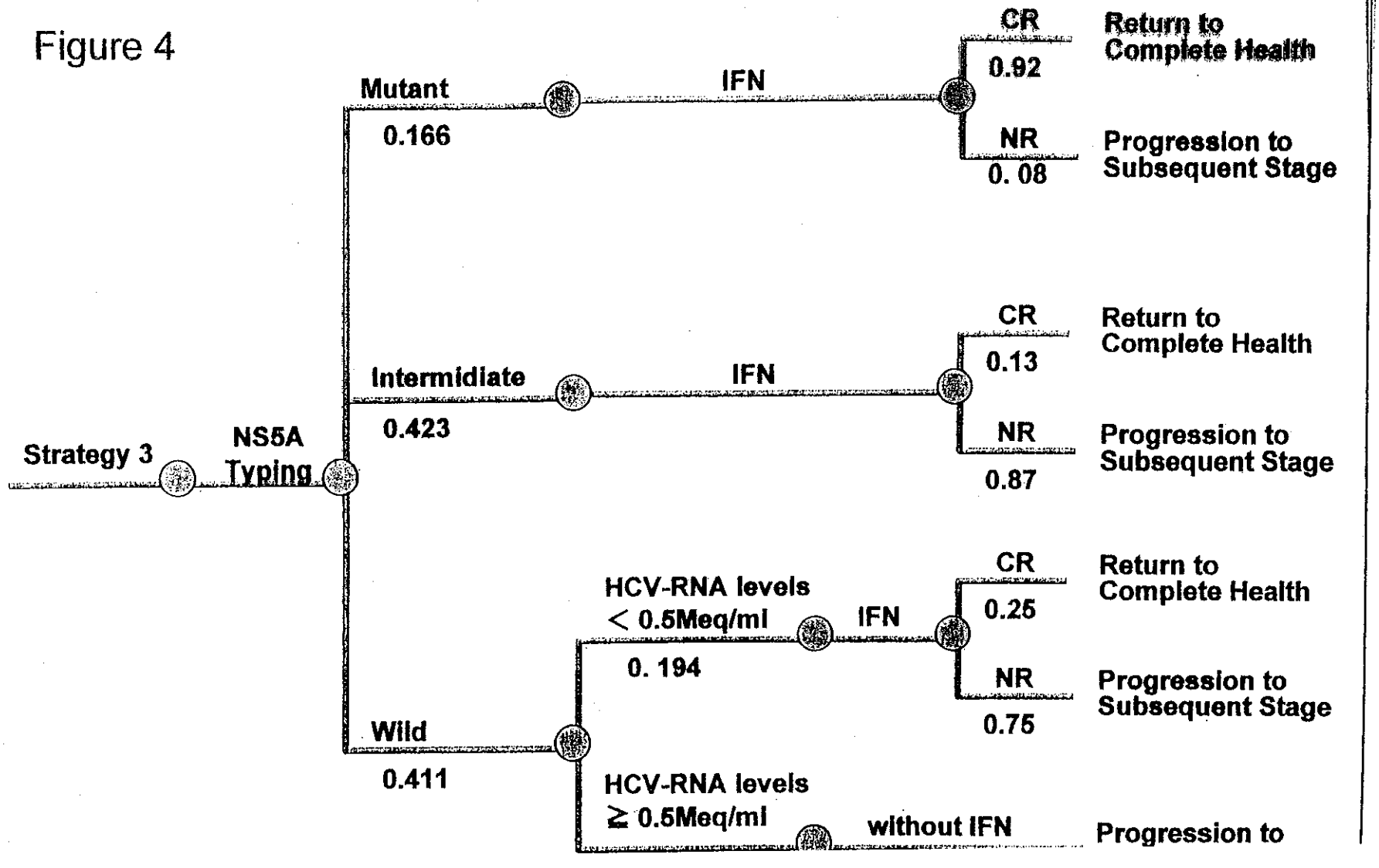
Sub Tree - Strategy 2

Figure 3



Sub Tree - Strategy 3

Figure 4



Sub Trees - Strategy 4, 5

Figure 5

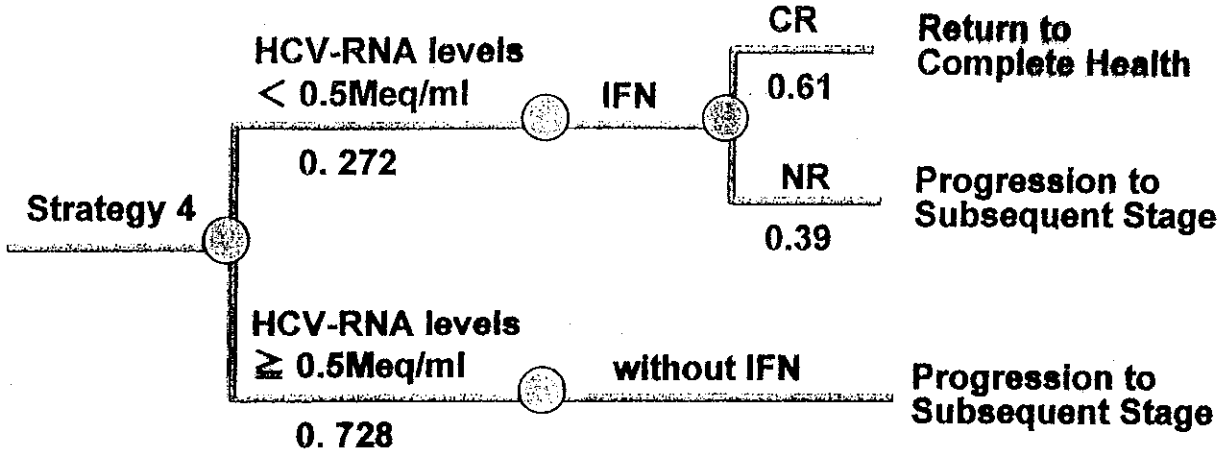
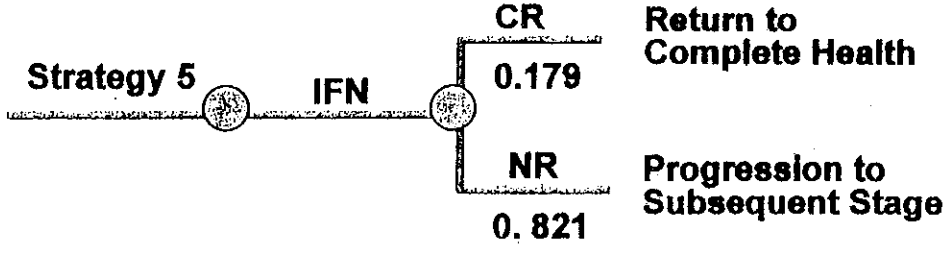


Figure 6



Sensitivity analyses

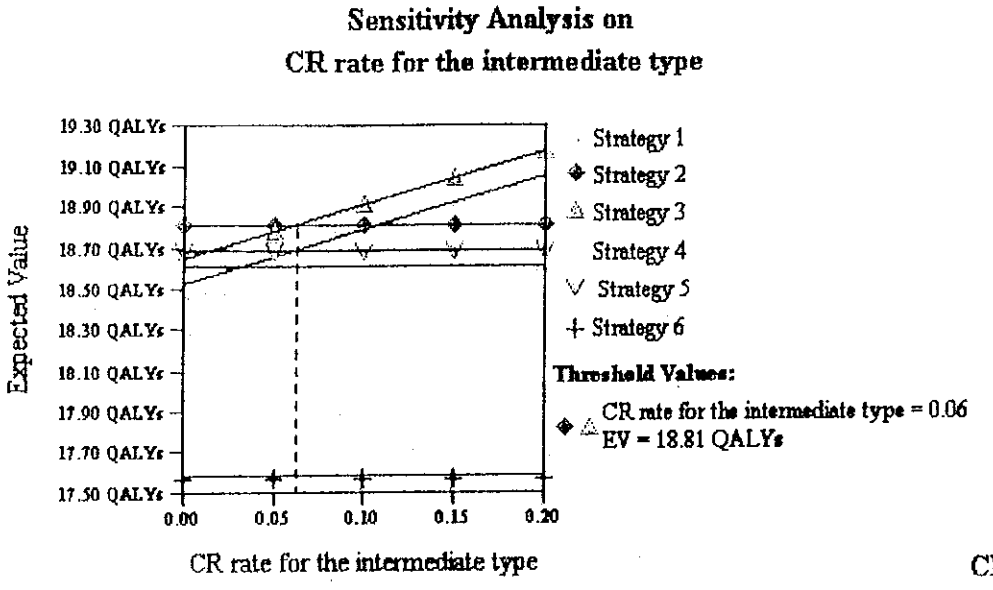


Figure 10

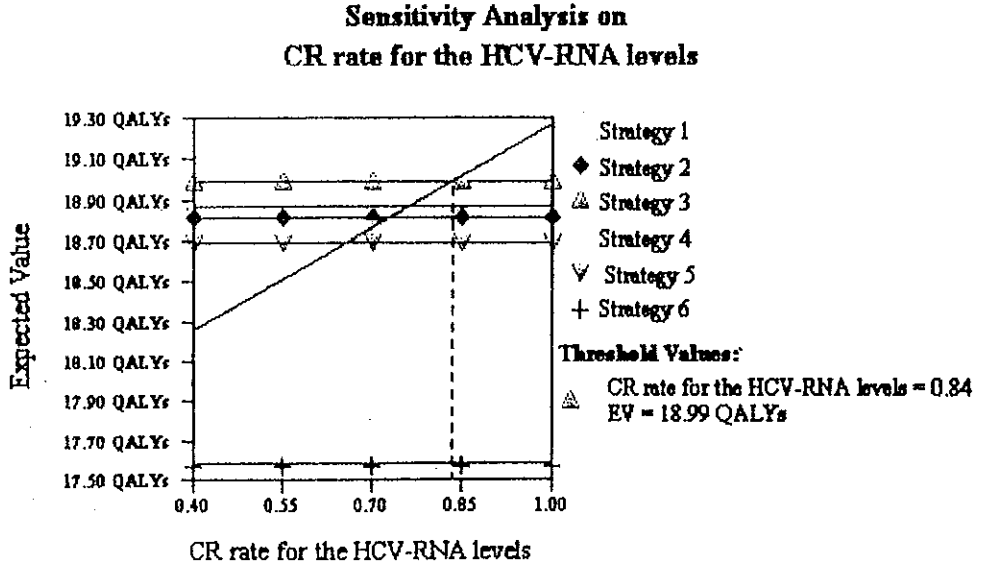


Figure 11

Sensitivity analyses

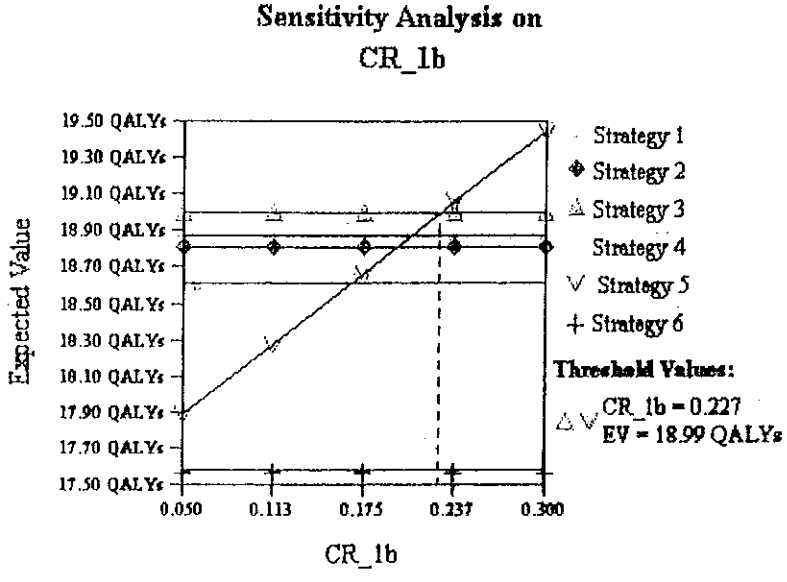
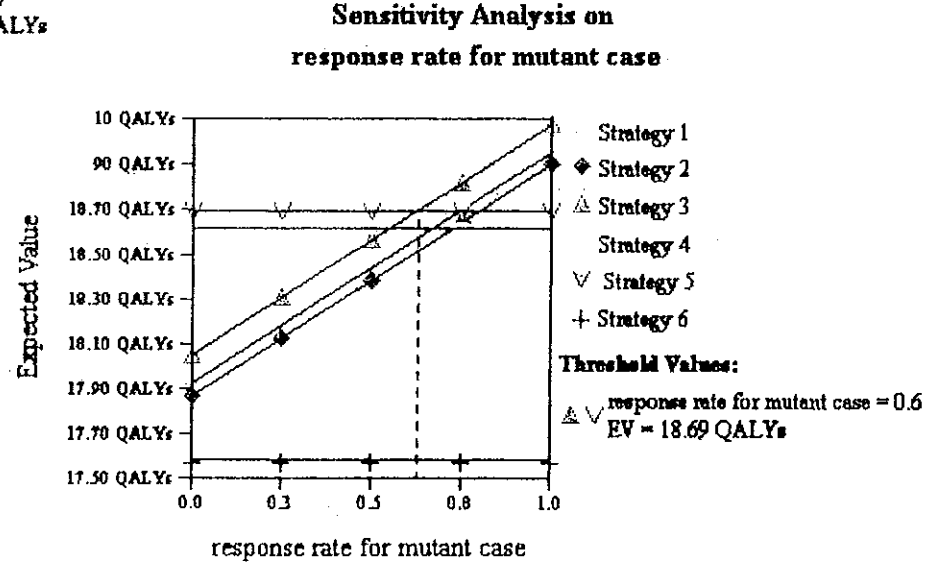


Figure 8



Sensitivity analyses

Sensitivity analyses showed that there were the following four valuables having large potential effects on the QALYs. (Figure 8 - 11)

- The rate of complete response (CR) of IFN treatment for the patients with HCV-1b.
- The rate of complete response (CR) of IFN treatment for the mutant types. The rate of complete response (CR) of IFN treatment for the intermediate types.
- The rate of CR of IFN treatment in case that HCV-RNA levels were below 0.5 Meq/ml.

For the strategy 3 to be most preferred, the threshold values of these four factors were as follows; (Figure 8 - 11)

- The rate of CR of IFN treatment for the patients with HCV-1b had to be as low as 22.7%.
- The rate of CR of IFN treatment for the mutant type had to be as high as 60%.
- The rate of CR of IFN treatment for the intermediate type had to be as high as 6%.
- The rate of CR of IFN treatment for the patients with HCV-1b infection had to be as low as 84% in case the HCV-RNA levels were below 0.5 Meq/ml.

Results

Baseline Analysis; (Table 1)

A baseline analysis showed that the strategy 3 was most **preferable.**

For a cohort of patients with HCV-1b infection (age; 40 years old), the QALYs for the strategy 3 was 27.9. (the discounted (3%) QALYs for the strategy 3 was 18.99.)

Strategy	1	2	3	4	5	6
QALYs (No discount)	27.59	27.45	27.90	26.94	27.15	24.35
QALYs (3% discount)	18.87	18.81	18.99	18.61	18.69	17.58

Table 1

Discussion and Conclusions

For a cohort of patients with HCV-1b infection (age; 40 years old), the strategy 3 was the most preferable. (The strategy 3; the mutant and intermediate types were treated with IFN, but the wild types were not treated if HCV-RNA levels were above 0.5 Meq/ml.)

The reason is the followings;

The rate of CR of IFN treatment for the patients with HCV-1b infection is only 10 to 20 % at the present time.
According to our clinical data, the rate of CR of IFN treatment for the mutant type and the intermediate type was 92% and 13%, respectively. The rate of CR of IFN treatment for the patients with HCV-1b was 61% in case the HCV-RNA levels were below 0.5 Meq/ml.

Therefore, IFN may not be the first choice of treatment for the wild type in HCV-1b infection if HCV-RNA levels were above 0.5 Meq/ml. For these patients, IFN plus ribavirin treatment or long-acting pegylated IFN treatment may be effective.

＜日本版 Health Utilities Index の臨床応用例（肝炎）＞

第３６回　日本肝臓学会採択抄録（２０００年６月発表予定）

日本における HCV-1b 型に対する IFN 治療戦略の評価。A Health Decision Analysis.

東京大学先端科学技術研究センタ-（１）、東京医科歯科大学医学部保健衛生学科（２）、同第２内科（３）

森口尚史（１）（２）、榎本信幸（３）、佐藤千史（２）

背景；IFN 治療は C 型慢性肝炎治療の第一選択とされているが、日本人 C 型慢性肝炎患者の７０％を占める HCV-1ｂ型は IFN 治療抵抗性である。しかし、最近 HCV-１ｂ型については NS5A2209-2248 領域のアミノ酸変異数及びウイルス量の多寡による IFN 治療予測が可能となっている。

目的；我々は日本人の HCV-１ｂ型患者に対して次のような６つの IFN 治療戦略を策定し、どれが最も QALYs （Quality Adjusted Life years;生活の質で調整された生存年）が長くなり、HCV-１ｂ型患者にとり有利な治療戦略となりうるのかを Marcov 決断分析の手法を用いて検討した。

戦略１；NS5A2209-2248 領域のアミノ酸変異数が１以上ならば IFN 治療をし、アミノ酸変異のない患者(Wild)には治療をしない。戦略２；NS5A2209-2248 領域のアミノ酸変異数が４以上の患者 (Mutant)には治療をし、その領域のアミノ酸変異数が１-３の患者（Intermediate）にはウイルス量が０.5 Meq/以上ならば IFN 治療をしない。戦略３；NS5A2209-2248 領域のアミノ酸変異数が１以上なら IFN 治療をするが、Wild でウイルス量が０.5 Meq/ml 以上ならば IFN 治療をしない。戦略４；NS5A 検査をせず、ウイルス量が０.5 Meq/ml 以下ならば IFN 治療をする。戦略５；全ての HCV-１ｂ型患者に IFN 治療を行う。戦略６；HCV-１ｂ型患者には IFN 治療を行わない。

対象と方法；我々は、日本人 HCV-１ｂ型患者の臨床経過を表現するために Marcov 決断分析モデルを作成した。C 型慢性肝炎の好発年齢である４０歳の日本人 HCV-１ｂ型患者１０００人をコホ-トとし、４０年間にわたる患者分布の推移を求め、それを元に各期の QALYs を算出した。なお QALYs については MacMaster 大学と共同開発した日本版 Health Utilities Index を用い、日本人 HCV-１ｂ型患者３９７人の各健康状態の選好ウエ-ト（効用値）を測定し算出した。更に NS5A に関する臨床デ-タ及び肝疾患の各ステ-ジ間の進展率については文献及び我々の臨床デ-タを用いた。

結果；基本分析では戦略３の QALYs が最も長く（34.63 QALYs)、患者にとって最も好ましい戦略となった。臨床デ-タの不確実性の処理のために詳細に感度分析・閾値分析を行ったところ戦略３の優位性が保たれるためには、以下の条件が満たされる必要があることが判明した。

1.HCV-1b 型患者に対する IFN 治療の完全著効率は 22.7%以下でなければならない。

2.Mutant と Intermediate の HCV-１ｂ型患者に対する IFN 治療の完全著効率はそれぞれ６０%以上、６%以上でなければならない。

3.ウイルス量が０.5 Meq/ml 以下の HCV-１ｂ型患者に対する IFN 治療の完全著効率は８４%以下でなければならない。

考察；ウイルス量が０.5 Meq/ml 以上で NS5A2209-2248 領域に変異のない日本人の HCV-１ｂ型患者に対しては現時点では IFN 治療は第一選択とはならず、リバビリンと IFN の併用療法あるいは肝炎の沈静化を主目的とした治療が望ましいと思われる。

Annual Meeting
of the International
Society of Technology
Assessment in
Health Care

Edinburgh, UK
19–23 June 1999

24 March 1999

Takamoto Uemura
Department of Preventive medicine and Public Health
School Of Medicine
Keio University
35 Shinanomachi, Shinjuku
Tokyo
Japan

Re: 15th Annual Meeting of ISTAHC - Poster Presentation

Further to recent correspondence, please find attached an information sheet for presenters which will assist you in your poster preparations for the above mentioned event.

Please note that your abstract entitled '***Evaluation of postoperative health status for patients with aortic disease by HUI (health utility index), DSSW (disease specific severity weight) and VAS (visual analogue scale)***' will be displayed as a poster on Monday, 21 June. Scientific posters will be displayed for a full congress day allowing delegates to view at leisure over coffee and lunch periods. Additionally, there will be a formal 'poster viewing' session incorporated within the main programme day.

Your new reference number is **P325**. This poster reference will relate to the Congress Final Programme, Abstracts Book and CD-Rom and should be quoted in all future correspondence.

We would like to thank you in advance for your contribution to the Congress and look forward to meeting you in Edinburgh in June.

Yours sincerely

Melissa Hughes

Melissa Hughes
Organising Secretariat

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Evaluation of Postoperative Health Status for Patients with Aortic Disease

by HUI (Health Utility Index), *DSSW*(Disease Specific Severity Weight) and VAS(Visual Analogue Scale)

Takamoto Uemura, David Feeny, Shunya Ikeda, Johanna L.Bosch, Shiaki Kawada

Corres to T. Uemura; Dept of preventive medicine and public health, school of medicine, KEIO university, Tokyo Japan.

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- ***Objective***; To evaluate the efficacy of the aortic operation for the elderly patients with aortic disease in terms of their health status and health related quality of life(HRQOL).
- ***Material and Method*** ;The health status of 418 patients with aortic disease were surveyed. Completed data for 188 cases from 10 multi-center were evaluated by HUI MarkⅢ,*DSSW* (T. Uemura et al, 14th annual meeting of ISTAHC 1998) and VAS before their operation and 6 month after the operation. *DSSW* is the clinical scores which is designed to reflect the clinical severity in each case based on the expert opinion and judgments. Questionnaire were mailed or orally administered. The Canadian scoring function for HUI3 was adopted to figure their HUI3 multi-attribute utility scores and mean of utility, VAS, *DSSW* were compared between pre- and post-operation (paired t-test).
- Clinical variables, such as the length of aortic aneurysm, blood pressure, type of aneurysm and operation performance were also surveyed.
- ***Result;*** Six month after the operation, multi-attribute utility were significantly higher than pre-operation. Among the eight attributes, utility scores for hearing and cognition became significantly higher. There were no statistically significant changes in other attributes. *DSSW* became lower at post-operation although it was not significant. In mobility and cognition, *DSSW* showed worse scores than pre-operation. These findings are shown in Table1. VAS showed significantly higher score after the operation, which is shown in bottom of table1.

Table 1 ***Multi-attribute utility and DSSW at pre- and post-operation.***

HUI3 Attributes	pre-ope HUI3 score	post-ope HUI3 score	*DSSW* Attributes	pre-ope *DSSW*	post-ope *DSSW*
Vision	0.95±0.06	0.94±0.13	Coronary	0.99±0.06	0.98±0.08
Hearing	0.93±0.22	0.96±0.17	Pulmonary	0.99±0.06	0.99±0.06
Speech	0.93±0.12	0.95±0.14	Mobility	1.00±0.00	0.98±0.12*
Ambulation	0.95±0.14	0.93±0.19	Intellectual	1.00±0.00	1.00±0.00
Dexterity	0.98±0.1	0.98±0.12	Renal	1.00±0.00	0.97±0.09
Emotion	0.94±0.12	0.94±0.11	Infection	0.99±0.03	1.00±0.00
Cognition	0.88±0.18	0.89±0.19	Peripheral nerve	0.99±0.06	0.97±0.08*
Pain	0.91±0.15	0.9±0.18	Bodily pain	1.00±0.00	1.00±0.00
grobal multi attribute utility	0.69±0.27	0.73±0.29*	*DSSW*	0.97±0.09	0.94±0.17
	pre-operation	post-operation	Changes in VAS	Range in Change	Median changes
VAS	0.67±0.15	0.78±0.16**	0.11±0.13	-0.6 - 0.4	0.03

Value are mean±SD *:p<0.05 **:p<0.01 by paired t-test

- ***Discussion;*** The contribution of aortic operation to the promotion of health status were significant but it was not remarkable. The reason why VAS showed most significantly higher scores after operation could be because the patients were satisfied by avoiding acute death. Lower *DSSW* scores after operation must suggest the more severe clinical status could be complicated following operation although it saved a life.

16th ISTAHC 2000 THE HAGUE

INTERNATIONAL SOCIETY OF TECHNOLOGY ASSESSMENT IN HEALTH CARE

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Shinjuku-ku
TOKYO 160-8582
JAPAN

Date: 4 February 2000
Ref.: CBI110/ez

Dear Colleague,

An international panel of reviewers has now selected the papers to be presented at the ISTAHC's 16th Annual Meeting in The Hague, 18-21 June 2000. In total, 420 abstracts were submitted. Each abstract has been evaluated by three reviewers.

I am pleased to inform you that your abstract entitled "JAPANESE HUI2 3SU15Q GENERAL POPULATION SURVEY " has been accepted for **poster presentation**. The poster must be set up in English. Please find enclosed a further instruction.
Your abstract reference number is: 404. Kindly quote this number in all future correspondence.
If for any reason you wish to withdraw your abstract, you must notify us by
15 March at the very latest.

Please note that you have to register for the conference and for accomodation. You will find the Registration Form and the Hotel Reservation Form in the enclosed Final Announcement. Due to the European Soccer Championship which is held in the Netherlands and Belgium at the same time as the 16th ISTAHC meeting, hotel space is in high demand. Therefore we advise you to book a hotel room as soon as possible but definitely **before April 1.**

I look forward to meeting you in The Hague.

Yours sincerely,

Henk Rigter,
Chair Local Organizing Committee and Scientific Committee

Japanese HUI Ⅱ ⅢSU15Q General Population Survey

Dr.Takamoto Uemura, Dr.David Feeny, Dr.Willium Furlong, Dr.Hisashi Moriguchi, Dr.J. L. Bosch
Corres to T. Uemura; Dept. of Preventive Medicine and Public Health, School of Med. Keio University, 35 Shinanomachi, Shinjuku-ku, Tokyo, Japan. 160-8582

Introduction; To examine the translation validity, adaptation and validation of the HUI(Health Utilities Index)mark Ⅱ ⅢSU15Q health related quality of life research for use in Japan.

Material and Methods; 1741(male:61.3%, female:38.7%, average age: 38.3 ± 12.7) including the workers in two large enterprises and their acquaintance were surveyed with Japanese HUI mark Ⅱ Ⅲ SU15Q which was translated in accord with IQOLA guidelines cooperated by McMaster group. 20 plausible independent variables* related to HRQOL and VAS(Visual analogue scale) were also asked. Canadian scoring function for HUI mark Ⅲ was temporary adopted to calculate the single and global multiattribute utility scores. Regression analysis between each independent variables and single, global utility score were done and ANOVA was performed to examine the difference in utility scores among each independent variables. (Variables*:1 name, 2 sex, 3 age, 4 BMI, 5 date, 6 occupation, 7 education status, 8 regident area, 9 family; number etc., 10 marriage status, 11 house, 12 income, 13 loan, 14 shift of work, 15 employment status, 16 job stability, 17 commuting time, 18&19 human relationship (work, family), 20 chronic disease.)

Result and Conclusion; In all age group, average for global utility scores and VAS were 0.83 ± 0.19 and 0.85 ± 0.14 respectively. No significant age-related impairment were observed in younger groups than 70, but emotion scores was significantly lower in 20-29 group. Several causes were discussed form social, economic issue and biological plausibility. Further large survey and detail analysis are expected.

Table 1 HUI3 Single, Global multiattribute utility scores and VAS by age group.

	Age Group (years)					
HUI Attributes	20-29 n=348	30-39 n=814	40-49 n=250	50-59 n=125	60-69 n=134	70 and over n=44
Vision	0.97±0.03	0.97±0.04	0.97±0.04	0.94±0.07*	0.94±0.08*	0.91±0.18*
Hearing	1±0	1.00±0.01	1±0	0.99±0.09	0.99±0.09	0.89±0.22*
Speech	0.98±0.08	0.99±0.05	0.99±0.06	0.98±0.07	0.99±0.05	0.90±0.19*
Ambulation	1.00±0.02	1.00±0.04	1.00±0.01	1±0	1.00±0.02	0.91±0.21
Dexterity	1.00±0.02	1.00±0.03	1.00±0.01	1±0	1.00±0.01	0.95±0.16
Emotion	0.92±0.09*	0.94±0.09	0.93±0.1	0.95±0.08	0.96±0.05	0.91±0.17
Cognition	0.93±0.12	0.93±0.12	0.93±0.11	0.93±0.12	0.92±0.11	0.82±0.22*
Pain	0.94±0.08	0.94±0.08	0.94±0.08	0.94±0.07	0.94±0.09	0.82±0.25*
Global multiattribute utility	0.83±0.17	0.84±0.17	0.83±0.22	0.84±0.18	0.83±0.17	0.69±0.40**
VAS	0.87±0.13	0.85±0.14	0.85±0.13	0.85±0.13	0.81±0.16*	0.69±0.22**

*:p<0.05, **:p<0.01 by ANOVA. 1±0: Nobody reported any problems in that attribute

19990799

以降は下記をご参照ください。

HUI23SU.15Q: Health Utilities Index Mark 2 and Mark3 (HUI2/3) 15-item questionnaire for self-administered, Self-assessed "usual" health status assessment.
D Feeny, W Furlog, GW Torrance
May 1997

自己記入式健康度調査質問票. HUI MarkⅡⅢSU15Q 日本語版質問票.
D Feeny, W Furlog, GW Torrance, 上村隆元, (日本語事務局)
1997