

出力帳票

入力されたデータに基づき、次の帳票を出力

<平成20年度>

- ・ 退院時サマリ
- ・ 診療情報提供書
- ・ 入院・手術証明書
- ・ 連携パス

<平成21年度以降対応予定>

- ・ 主治医意見書
- ・ 脳卒中登録票
- ・ 入院診療計画書

システムの運用状況

参加機関 22機関(盛岡、宮古、釜石、気仙)

入力患者総数 495人

(平成22年1月現在)

何があればシステムを利用できるか？

- インターネット環境のPC(IE6.0)
- ID、パスワード

我が国における介護認定の実態 ～脳卒中と要介護に注目して～

横川博英, 安村誠司

福島県立医科大学医学部公衆衛生学講座

【高齢化の推移と現状】

日本の人口は、戦後一貫して増加していたが2005年前後を境に減少に転じ、今後もその傾向は持続するものと予想されている。一方、高齢化率は増加傾向にあり、特に75歳以上の後期高齢者の割合の増加が注目を集めている(図1)。高齢化率の国際比較を図2に示した。終戦直後、日本の高齢化率は欧米諸国と比較してむしろ低率であった。しかし、その後急激に上昇し現在は主要先進国中で最も高率であり、将来にわたりその傾向は持続すると予測されている。

図1. 高齢化の推移と将来推計 (平成19年度版 高齢社会白書)

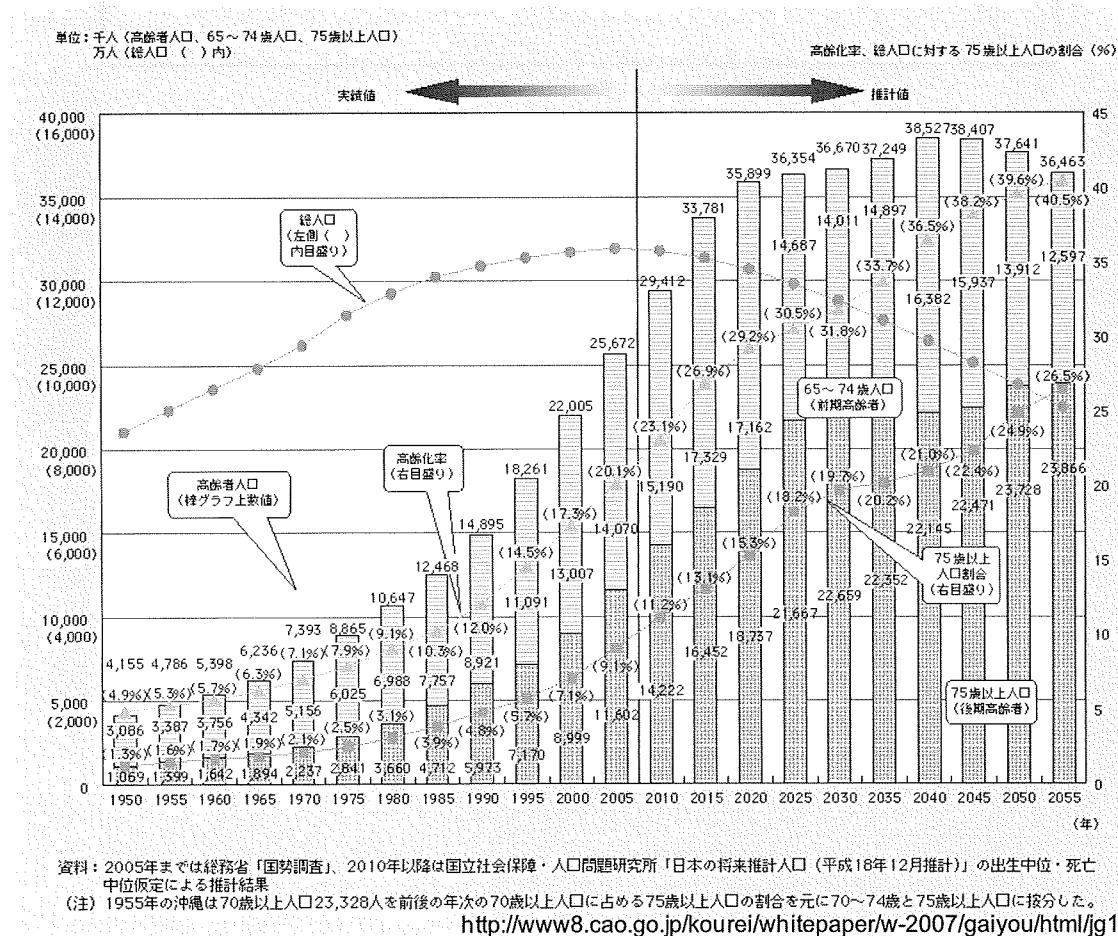
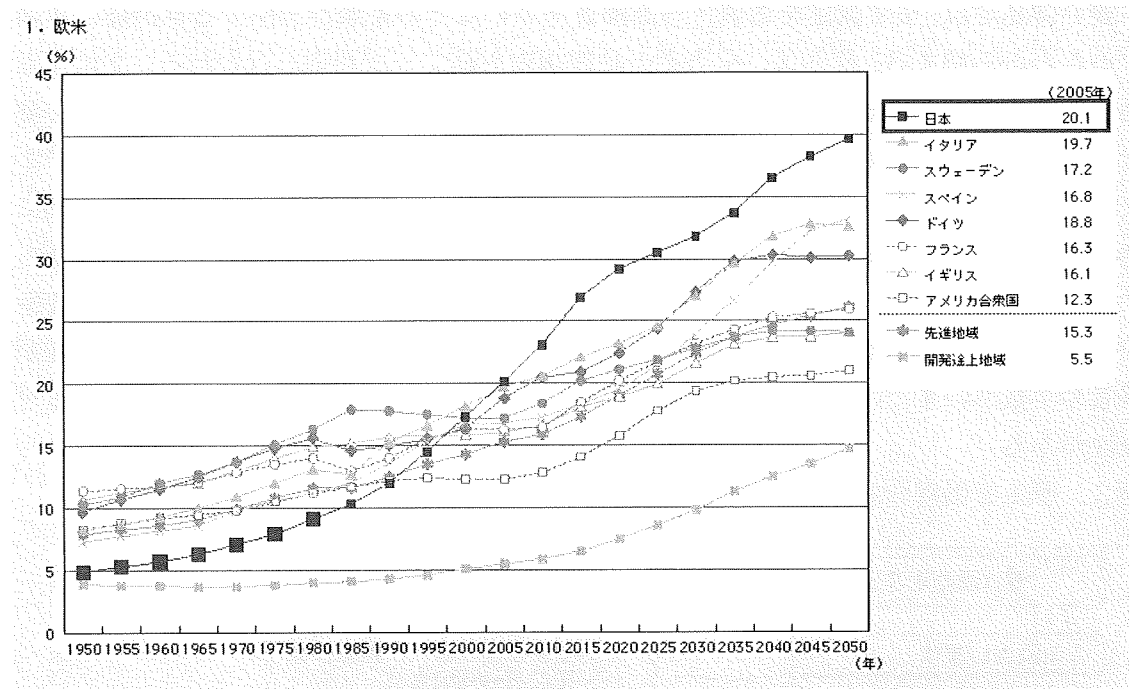


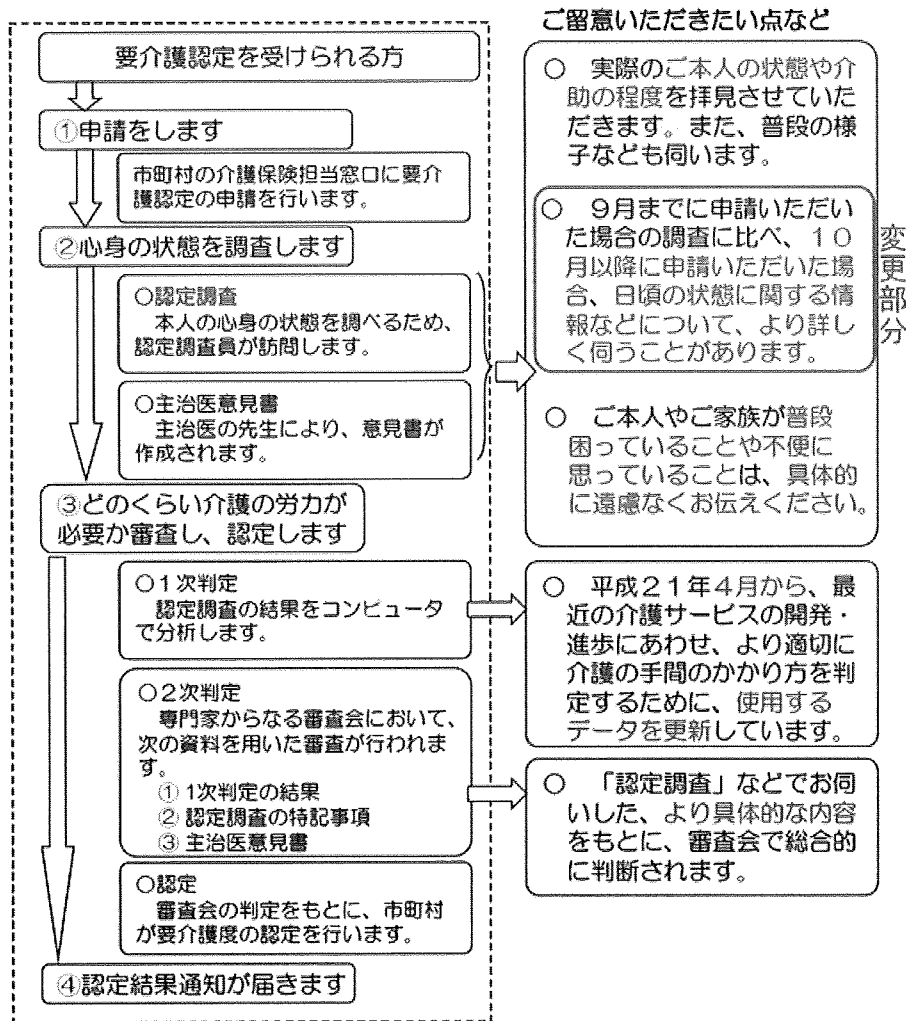
図2. 高齢化率の推移と国際比較（平成19年度版 高齢社会白書）



【要介護認定の流れと最近の話題】

要介護認定は、まず認定を希望する高齢者あるいはその家族が居住する自治体に申請することから始まる。申請後、担当者の訪問調査を経て一次判定が行われる。主治医意見書等を加味し介護認定審査会において二次判定が行われ、ケアプランが作成され必要なサービスが提供される。しかし、近年要介護認定が軽く認定されているのではないかという議論が高まり、厚生労働省は2009年10月から「要介護認定」の基準を大幅に修正した。この修正によって、日ごろの本人の状態や介護の実態を十分に評価し、さらに本人や家族の意向を十分に考慮されることになった(図3)。しかしながら、介護保険で使えるサービス量を決める「要介護認定」について、認定審査を担う医師や介護関係者の半数がいまだに「大幅な見直しが必要」と考えており更なる修正が必要になる可能性がある。

図3. 厚生労働省介護保険最新情報 108

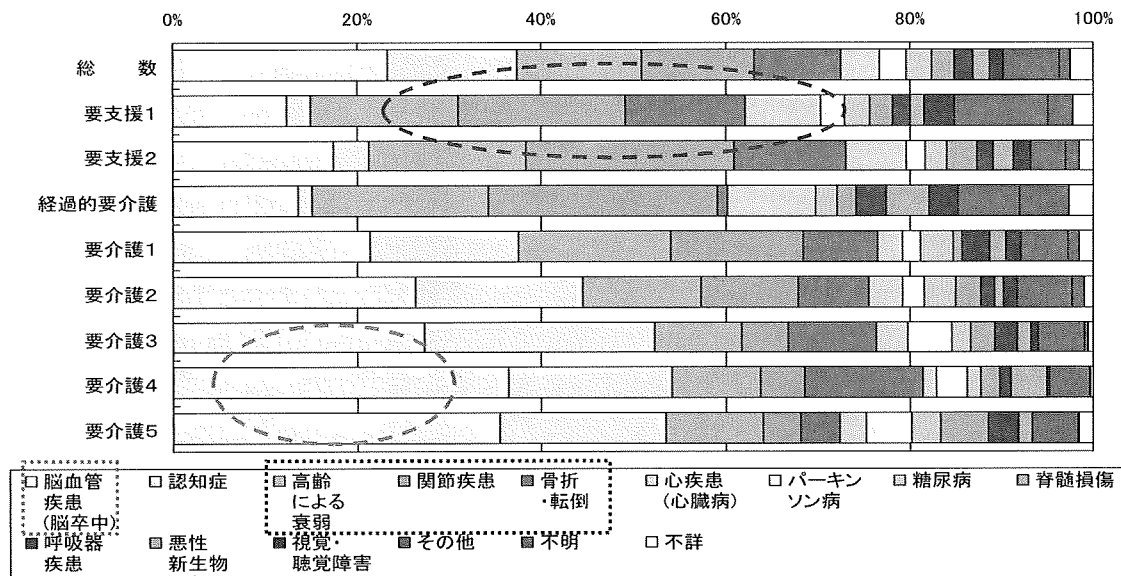


【脳卒中と要介護との関連】

要介護の原因に関しては、要介護度によってその原因割合が異なることが知られている。要支援1および2などの軽度者では「高齢による衰弱」「関節疾患」「骨折・転倒」などがその原因として大きな割合を占めている。一方、要介護3以上では脳血管疾患がもっとも大きな割合を占めている（図4）。さらに、男女別にその原因割合を検討すると男性では4割以上が脳血管疾患を原因として要介護認定を受けており、男性では脳血管疾患が要介護発生の重要な要因であると考えられる（図5）。介護予防に関して、脳血管疾患予防は重要な対策と考えられる。

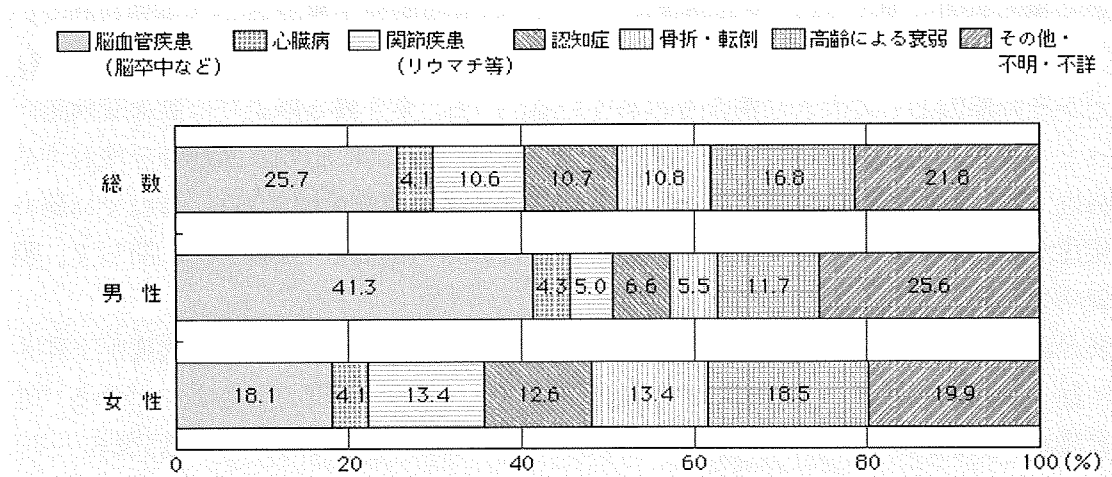
要介護者からみた主な介護者の続柄は、約25%が配偶者であり、要介護度が上昇するに従い介護者の介護時間も増加することが知られており、近年注目されつつある「老老介護」にも関連して今後は介護者も視野に入れた対策が必要と考えられる（図6-7）。

図4. 介護度別の原因割合



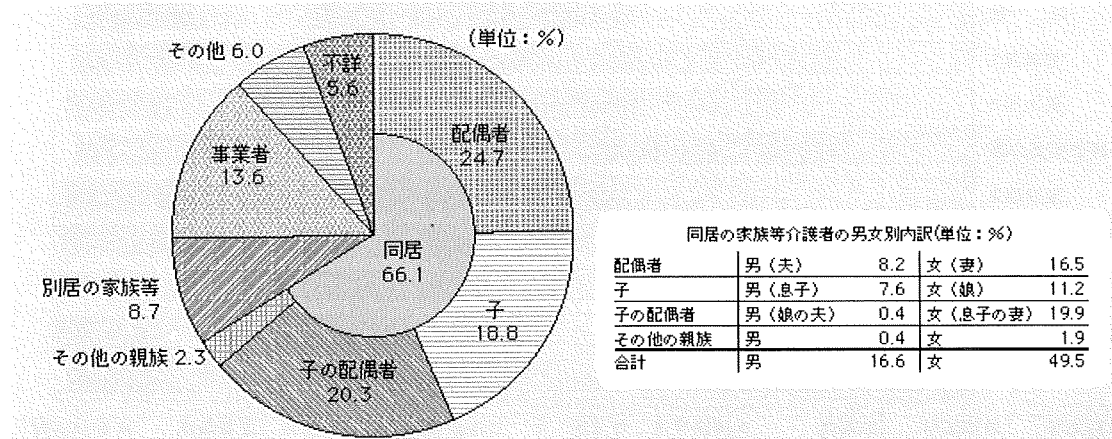
(H19国民生活基礎調査)

図5. 介護度別の原因割合



資料：厚生労働省「国民生活基礎調査」(平成16年)

図6. 要介護者からみた主な介護者の続柄



資料：厚生労働省「国民生活基礎調査」(平成16年)

IV. 発症登録参加施設名・組織名および研究協力者

研究参加施設名・組織名および研究協力者リスト

病院施設

岩手県立中央病院

院長	佐々木 崇
脳神経外科診療部長	関 博文
脳神経外科長	菅原 孝行
神経内科長	高橋 弘明
事務局長	吉田 廣光
医事課長	鎌田 隆一

盛岡赤十字病院

院長	沼里 進
脳神経外科部長	久保 直彦
リハビリテーション科部長	木戸口 順
神経内科部長	野崎 有一
事務部長	佐々木利雄

岩手医科大学付属病院

院長	小林誠一郎
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岩手県立二戸病院

院長	佐藤 元昭
事務局長	東山 昭
医事課長	阿部 誠

岩手県立久慈病院

院長	阿部 正
事務局長	小松 岩松
医事課長	松舘 隆

岩手県立一戸病院

院長	高田 耕
事務局長	菅原 文芳
医事課長	小倉 和彦

岩手県立軽米病院

院長	横島 孝雄
事務局長	佐藤 敬一
医事課長	中村 善一

岩手県立宮古病院

院長	菅野 千治
事務局長	菊池 儀
医事課長	菊池 好徳

九戸地域診療センター

センター長	佐藤 元昭
事務長	小原 鉄男
医事課	高田こず恵

岩手県立山田病院

院長	及川 修次
事務局長	高橋 正好

済生会岩泉病院

院長	柴野 良博
事務長	藤森 政雄

国民健康保険種市病院

院長	漆久保 潔
事務局長	苧坪 健一

財団法人いわてリハビリテーションセンター

センター長	高橋 明
-------	------

栃内第二病院

院長	栃内 秀彦
----	-------

東八幡平病院

院長	及川 忠人
----	-------

南昌病院

院長	木村 宗孝
----	-------

盛岡繋温泉病院

院長	小西 一樹
----	-------

川久保病院

院長 尾形 文智

荻野病院

院長 荻野 忠良

保健所

二戸保健所、久慈保健所

所長 田名場善明

宮古保健所

所長 柳原 博樹

市町村

二戸市、一戸町、軽米町、九戸村、久慈市、洋野町、野田村、普代村、

宮古市、山田町、岩泉町、川井村、田野畑村

盛岡市、八幡平市、葛巻町、岩手町、滝沢村、雫石町、矢巾町、紫波町

リサーチナーズ

岩手県立二戸病院担当

篠崎 悦子、小野 洋子、桜庭 順子

岩手県立久慈病院担当

宇部ヤス子、藤森 昭子

岩手県立中央病院担当

木戸口隆子、長澤 郁子、平尾 直美、工藤早由美

盛岡赤十字病院担当

狐崎 妙子、中嶋 京子、西本 亜矢

岩手医科大学付属病院担当

増田 妙子、井上 弘子、遠藤 愛子

V. 研究成果の刊行に関する一覧表

研究成果の刊行に関する一覧表

【雑誌(英文)】

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
M Ogawa , F Tanaka, T Onoda , M Ohsawa, K Itai , T Sakai , A Okayama, M Nakamura, On Behalf of the Northern Iwate Heart Disease Registry Consortium	A Community Based Epidemiological and Clinical Study of Hospitalization of Patients With Congestive Heart Failure in Northern Iwate, Japan	Circulation Journal	71	455-59	2007
M Ohsawa , K Itai, T Onoda , K Tanno , S Sasaki , M Nakamura, A Ogawa , K Sakata, K Kawamura ,T Kuribayashi , Y Yoshida , A Okayama	Dietary intake of n-3 polyunsaturated fatty acids is inversely associated with CRP levels, especially among male smokers	Atherosclerosis	201	184-91	2008
S Makita , M Nakamura, K Satoh , F Tanaka, T Onoda , K Kawamura, M Ohsawa, K Tanno, K Itai , K Sakata , A Okayama, Y Terayama , Y Yoshida, A Ogawa	Serum C-reactive protein levels can be used to predict future ischemic stroke and mortality in Japanese men from the general population	Atherosclerosis	204	234-38	2009
T Takahashi , M Nakamura, T Onoda , M Ohsawa, K Tanno , K Itai , K Sakata , M Sakuma, F Tanaka , S Makita, Y Yoshida , A Ogawa, K Kawamura, A Okayama	Predictive value of plasma B-type natriuretic peptide for ischemic stroke: A community-based longitudinal study	Atherosclerosis	207	298-303	2009

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
M Ohsawa , K Itai , K Tanno , T Onoda , A Ogawa, M Nakamura , T Kuribayashi , Y Yoshida, K Kawamura , S Sasaki, K Sakata , A Okayama	Cardiovascular risk factors in the Japanese northeastern rural population	International Journal of Cardiology	137	226-35	2009
M Nakamura ,F Tanaka , T Onoda, T Takahashi , T Segawa , K Kawamura, K Tanno , M Ohsawa , K Itai , K Sakata, S Makita , A Okayama, On behalf of the Iwate KENCO study groups	Gender-specific risk stratification with plasma B-type natriuretic peptide for future onset of congestive heart failure and mortality in the Japanese general population	International Journal of Cardiology	In press	In press	In press
M Sakuma , M Nakamura, F Tanaka , T Onoda, K Itai , K Tanno, M Ohsawa , K Sakata, Y Yoshida, K Kawamura, S Makita, A Okayama	Plasma B-type Natriuretic Peptide Level and Cardiovascular Events in Chronic Kidney Disease in a Community-based Population	Circulation Journal	In press	In press	In press

【雑誌(和文)】

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
横川博英、安村誠司、 丹野高三、大澤正樹、 小野田敏行、板井一好、 川村和子、坂田清美	閉じこもりと要介護発生との関連 についての検討	日本老年医学会 雑誌	46(5)	447-57	2009

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
栗林徹、大澤正樹、 丹野高三、小野田敏行、 板井一好	岩手県北部地域住民の肥満に 関する考察:岩手県北地域コホ ート研究の登録時横断解析結 果より	岩手公衆衛生学 会誌	20(2)	33-45	2009
小野田敏行、丹野高三、 大澤正樹、板井一好、 坂田清美、小川 彰、 小笠原邦昭、田中文隆、 中村元行、大間々真一、 吉田雄樹、石橋靖宏、 寺山靖夫、栗林 徹、 川村和子、松館宏樹、 岡山 明	岩手県北地域における死亡、脳 卒中と心筋梗塞罹患、心不全発 症および要介護認定状況につ いて～岩手県北地域コホート研 究の平均 2.7 年の追跡結果から ～	日本循環器予防 学会誌	45(1)	32-48	2010
丹野高三、栗林 徹、 大澤正樹、小野田敏行、 板井一好、八重樫由美、 坂田清美、中村元行、 吉田雄樹、小川 彰、 寺山靖夫、川村和子、 岡山 明	高齢者の body mass index と総 死亡、循環器疾患罹患との関連 ～岩手県北地域コホート研究の 2.7 年の追跡調査より～	日本循環器予防 学会誌	45(1)	9-21	2010

VI. 研究成果の刊行物・別冊

A Community Based Epidemiological and Clinical Study of Hospitalization of Patients With Congestive Heart Failure in Northern Iwate, Japan

Muneyoshi Ogawa, MD; Fumitaka Tanaka, MD; Toshiyuki Onoda, MD*;
Masaki Ohsawa, MD*; Kazuyoshi Itai, PhD*; Toshiaki Sakai, MD**;
Akira Okayama, MD***; Motoyuki Nakamura, MD On Behalf of
the Northern Iwate Heart Disease Registry Consortium

Background Community based studies of congestive heart failure (HF) are lacking in the Japanese population. **Methods and Results** To delineate the epidemiological and clinical features of advanced HF in the general Japanese population, hospitalized adult cases of HF in all hospitals within the Ninohe district were registered for 3 years. During the survey period, 190 new onset cases (males n=93; females n=97) and a total of 391 hospitalizations (including repeat admissions) were registered. The prevalence of atrial fibrillation in new HF cases was 56% in males and 45% in females. On the basis of the population of the district, the incidence of hospitalized HF was 96 in males and 92 in females per 100,000 person-years. The percentage of HF patients who were ≥ 65 years of age was 82% in males and 94% in females. In cases undergoing echocardiography, preserved left ventricular systolic function (left ventricular ejection fraction $\geq 50\%$) was observed in 29% of males and 41% of females. There was a significant seasonal variation in HF admissions (Spring 32%; Summer 20%; Autumn 20%; Winter 28%; $p < 0.01$). **Conclusions** In comparison with published results of USA and European community based studies of HF, the present HF cohort showed that: (1) mean age, prevalence of preserved ejection fraction, and trends in seasonal variation were comparable; however (2) the incidence of HF was obviously lower. These epidemiological and clinical characteristics should be taken into consideration when establishing a therapeutic and preventive approach for HF. (Circ J 2007; 71: 455–459)

Key Words: Community; Epidemiology; Heart failure; Incidence; Population; Prevalence

Congestive heart failure (HF) is one of the most common reasons for hospital admission among the elderly in US and European populations.^{1,2} This increase in prevalence might be caused by rising mean age and improved survival of patients with cardiovascular disease because of therapeutic advances.^{3,4} Moreover, patients with HF are at high risk of readmission to hospital. In fact, surveys in the USA and Europe have reported that 16–50% of elderly HF patients are readmitted within 6 months of their first admission.^{2,5–7} As a consequence, HF has become an important public health problem, with increasing prevalence placing a growing burden on health-care systems in these countries.⁸

The mean age of the Japanese population is increasing steeply and it is estimated that by the year 2020 25% of the population will be ≥ 65 years of age. As observed in the USA and Europe, the HF epidemic might become evident in our population. However, there has been a deficiency of population or community based epidemiological studies in the Japanese population to date, leaving a gap in epidemio-

logical data such as incidence, prevalence and prognosis of HF in this country. These data are not simply a matter of curiosity but will be essential for physicians, policy makers, economists, health-care administrators, and pharmaceutical manufacturers.

Although several epidemiological and clinical studies of HF in teaching hospitals have been published or are ongoing in this country,⁹ no adequate community based data have been reported. We have therefore collected prospective data on all registered hospitalized adult patients with HF over a 3-year period in the Ninohe district, a rural community in northern Iwate where medical facilities are limited and the population is relatively stable. On the basis of this registration survey, we have calculated hospitalization and readmission rates, seasonal variations, and the incidence of preserved left ventricular systolic function and atrial fibrillation in HF patients.

Methods

Study Population

The Ninohe district is a rural area situated in the Iwate prefecture, northeast of Honsyu, Japan (Fig 1). The Ninohe district comprises the city of Ninohe, the towns of Ichinohe, Karumai and Jouboji, and the village of Kunohe. According to annual statistical data for 2003 issued by the Iwate prefecture government, this region had a resident population of 67,307 (32,257 males; 35,050 females). The percentage of the population aged ≥ 65 years was 26%. Following an in-

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Second Department of Internal Medicine, *Hygiene and Preventive Medicine, Iwate Medical University, Morioka, **Iwate Prefecture Ninohe Hospital, Ninohe and ***National Cardiovascular Center, Suita, Japan

Mailing address: Motoyuki Nakamura, MD, Second Department of Internal Medicine, Iwate Medical University, 19-1 Uchimarui, Morioka 020-8505, Japan. E-mail: nkmmoto@iwate-med.ac.jp

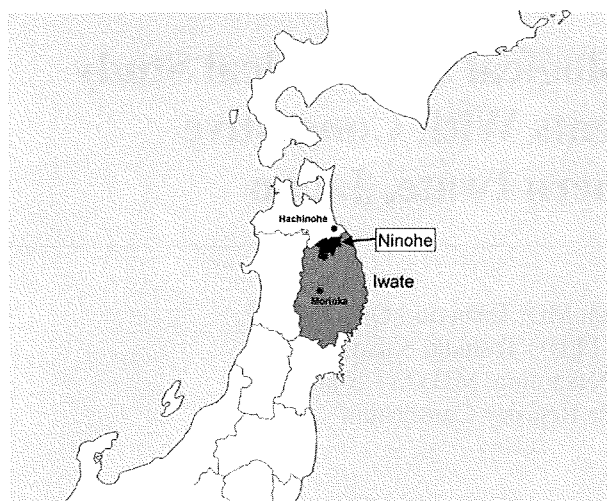


Fig 1. Study area. Ninohe district of Iwate, northern Honshu, Japan.

tensive briefing on the rationale for the study and discussion of ethical issues, physicians representing all primary care and referral centers in the Ninohe district community agreed to participate. The district contains only 4 public hospitals (Ninohe, Ichinohe, Karumai and Ibonai Hospitals) and 7 private clinics with admission facilities. In addition, to ensure almost complete capture of all HF hospitalizations within the Ninohe district during the study period, registration was extended to include medical centers located in Morioka city (60 km south of Ninohe) including our University hospital and 3 referral medical centers located in Hachinohe city (50 km north of Ninohe). Approval was obtained from the ethics review board of each participating hospital prior to commencement of the study. Because the study protocol involved a review of charts obtained as part of routine medical care only, patient consent was not required.

Inclusion Criteria and Enrolment

Inclusion criteria were based on the Framingham definition of HF¹⁰ with subjects assigned a diagnosis of HF if either 2 major criteria or 1 major and 2 minor criteria were present concurrently. The major criteria were: paroxysmal nocturnal dyspnea, orthopnea, abnormal jugular venous distention, rales, cardiomegaly, pulmonary edema, presence of a third heart sound, elevated central venous pressure, and weight loss of 4.5 kg or more in 5 days. The minor criteria included: edema, night cough, dyspnea on exertion, hepatomegaly, pleural effusion, tachycardia, and weight loss of 4.5 kg or more in 5 days.

Subjects were enrolled only if they had been hospitalized and fulfilled the following conditions: (1) were established residents of the Ninohe district; (2) were aged ≥ 20 years; and (3) were admitted between 1 April 2002 and 31 March 2005. Registration was initially performed by attending physicians at each hospital. Patients compatible with the diagnosis of HF in terms of symptoms, physical examination, chest X-rays, and response to treatment were checked by using a registration card after admission. Patients were excluded if they had been hospitalized: (1) to undergo invasive cardiac examination such as cardiac catheterization; (2) for the introduction of β -blocker therapy; (3) with an advanced stage malignant tumor and/or preceding apparent pneumonia; (4) within 4 weeks after onset of acute myocar-

Table 1 Comparison of Clinical Characteristics of Patients With Heart Failure Divided by Sex

	Male	Female	All
<i>No. (n)</i>			
New onset	93	97	190
Readmission	99	102	201
Total	192	199	391
<i>Mean age (years)</i>			
New onset	73.2 \pm 12.7	80.1 \pm 11.4	76.3 \pm 13.3
Readmission	78.6 \pm 10.4	82.0 \pm 9.7	79.9 \pm 10.7
Total	75.3 \pm 12.2	81.0 \pm 10.7	78.1 \pm 12.3
<i>% of age ≥ 65 years</i>			
New onset	74	92	83
Readmission	90	95	92
Total	82	94	88
<i>% of age ≥ 80 years</i>			
New onset	32	63	48
Readmission	56	65	60
Total	42	64	53
<i>% of atrial fibrillation</i>			
New onset	56	45	50
Readmission	44	37	40
Total	53	44	48
<i>% of ejection fraction $\geq 50\%$</i>			
New onset	26	40	33
Readmission	33	46	32
Total	29	41	34

dial infarction; or (5) with end-stage renal failure and without apparent cardiac dysfunction.

To ensure that nearly all appropriate cases had been identified, we periodically retrieved and reviewed medical charts and/or discharge summaries for nearly all patients ($>99\%$) admitted to the cardiology and internal medicine wards of all hospitals within the study district. This was carried out by 2 or more members of the study steering committee, which comprised 3 cardiologists, 3 trained research nurses, and 2 epidemiologists. Patients who had been transferred to another hospital were counted on the index admission only. Echocardiographic evaluation such as left ventricular ejection fraction assessment (Simpson or Teichholtz method) was performed for all patients with HF at 1 hospital (Ninohe Hospital) by full-time attending cardiologists, whereas in the remaining hospitals, evaluation was performed by part-time cardiologists in a small percentage of patients only. The percentage of patients who underwent echocardiographic examination was 65%.

Data Analysis

Continuous variables are expressed as mean \pm SD. Group comparisons were based on the Student's *t*-test or chi-square test, as appropriate. Incidence rates were calculated as the observed number of new cases of HF divided by the age- and sex-specific person-years of observation. An estimation of residents in the Ninohe district aged ≥ 20 years was derived from published census data at October 2003. In addition, the incidence rate was adjusted by using the standard Japanese population. Seasons were defined as follows: Spring=20 March to 19 June; Summer=20 June to 21 September; Autumn=20 September to 20 December; Winter=21 December to 19 March. The significance of seasonal variation was tested by the Roger's method.¹¹

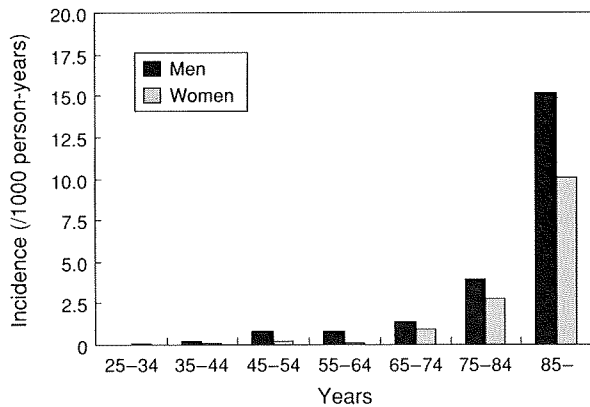


Fig 2. Incidence of heart failure according to the sex and 10-year age group.

Results

Registered Number of Patients

During the 3-year study period, the total number of HF patients including readmission cases was 391 (192 males; 199 females). This total included 190 cases of new onset (93 males; 97 females), yielding a readmission case of 51% in both sexes. There were no significant differences in the number of registered cases by year (2002, n=118; 2003, n=149; 2004, n=124: NS).

Patient Characteristics

The age range for new onset cases was 35–96 years in males and 28–98 years in females. As shown in Table 1, the mean age was significantly higher in females (81.0 ± 10.7 years vs males 75.3 ± 12.2 years; $p < 0.001$). Within the new onset cohort, 83% were ≥ 65 years of age (74% males; 92% females; $p < 0.01$), and 48% were ≥ 80 years of age (32% males; 63% females; $p < 0.01$).

Atrial Fibrillation

Atrial fibrillation was observed in approximately half of new onset cases (Table 1), with no significant difference between the sexes (56% males; 45% females: NS). Readmission cases showed a comparable trend (44% males; 37% females: NS).

Preserved Ejection Fraction

After exclusion of patients with significant valvular abnormalities, the percentage with a preserved left ventricular ejection fraction of $\geq 50\%$ was higher in females than in males (41 vs 29%). Thirty-four percent of registered cases were therefore classified as having HF with preserved ejection fraction. Among the new onset HF cases, the ejection fraction was preserved in 40% of females and 26% of males. A similar trend was observed in readmission cases (46% females, 33% males). The mean age of patients who underwent echocardiography was significantly younger than that of patients who did not (76.3 ± 12.5 vs 81.7 ± 10.0 years of age; $p < 0.01$).

Incidence

During the 3-year study period, 190 new cases of HF (93 male, 97 female) were diagnosed in the Ninohe district. The crude overall incidence rate was 94 per 100,000 person-years. Male subjects had a slightly higher crude incidence rate at 96 compared to female subjects at 92 per

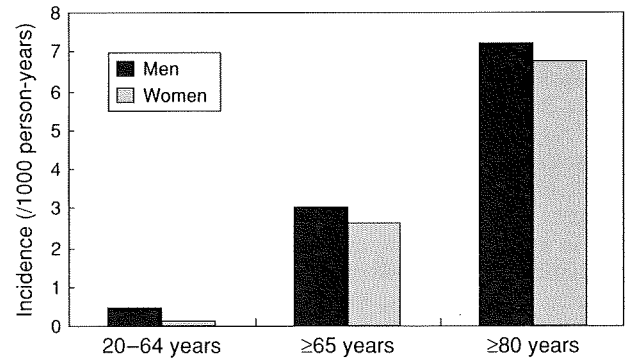


Fig 3. Incidence of heart failure according to sex and age below 65 years, ≥ 65 years, and ≥ 80 years.

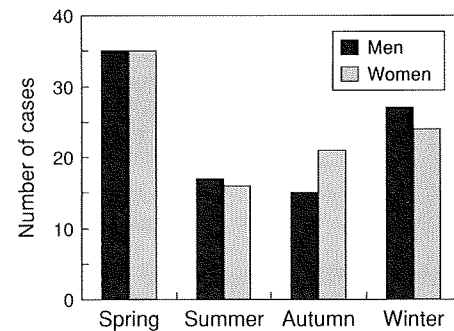


Fig 4. Seasonal variation in the accumulated number of hospitalizations for heart failure during the 3-year study period.

100,000 person-years. The age- and sex-adjusted incidence rate for the standard Japanese population was 39 per 100,000 person-years. Analysis of incidence rates by age and sex showed a general age-associated increase with male predominance (Fig 2). The incidence rate varied from less than 0.5 per 1,000 person-years in females aged under 65 years to 15 per 1,000 person-years in males aged ≥ 85 years. As shown in Fig 3, the incidence rates for elderly subjects (≥ 65 years old) were 3.05 per 1,000 person-years for males and 2.65 per 1,000 person-years for females. In the very elderly (≥ 80 years), rates were higher at 7.24 per 1,000 person-years for males and 6.76 per 1,000 person-years for females.

Seasonal Variation

The cumulative number of new hospitalized cases during the 3-year study period is shown in Fig 4. There was significant variation by season (Spring 37%; Summer 17%; Autumn 19%; Winter 27%; $p < 0.01$). Hospitalization rates in Spring and Winter were greater than 50% higher than in Summer and Autumn. This seasonal variation remained evident when the analysis was performed on all admission cases (including readmissions) (Spring 32%; Summer 20%; Autumn 20%; Winter 28%; $p < 0.01$).

Discussion

The present study was conducted in a rural Japanese community where the proportion of the population aged ≥ 65 years is similar to that predicted for the future Japanese population. We have demonstrated the following new observations: (1) a significant proportion of HF patients