We found that an increase in the number of hospital staff increased physician payment while the an increase in the number of physicians per bed tended to decrease fulltime physician payment. An increase in the mean number of in-patients per doctor, number of surgical operations per doctor and average length of stay also tended to decrease physician payment. Hospitals residing in MSA 2 or 3 paid doctors more on average than hospitals in MSA 1, and public hospitals tended to pay fulltime doctors more on average than those in private hospitals. The coefficient of the number of staff per bed, the number of physicians per bed and the mean number of in-patients per doctor more than doubled in the multi-variable model compared to that of the single variable model, suggesting confounding by the other included variables.

There was insufficient input in one hospital where it was unclear how many full time doctors in the hospital had graduated from the local medical school, so we used the number of doctors dispatched form the medical department of local medical schools, which information was provided. We conducted a sensitivity analysis by moving the number from the largest amount (all fulltime doctors are from the local medical school) to the smallest amount (no doctors are from the local medical school). It turned out that after the whole process of data analysis, the final model was the same in either extreme.

## *Discussion*

Based on our model, we found that hospitals that employed less staff per bed and more physicians per bed, had more in-patients per physician to take care of, that conducted more surgery per physician, that had a longer average length of stay, located in medical service area 1 (not 2 or 3), and were private tended to pay doctors less. The degrees of freedom adjusted $R^2$ was 0.68, indicating that our model could explain the variability of physician payment by acute care hospitals fairly well.

The tendency for public hospitals to pay physicians more than private hospitals on average was a surprise, since past reports showed that average salary of doctors tended to be higher in private hospitals.(9) The breakdown analysis of physician payment showed that while salary of private hospitals were actually slightly higher than public hospitals, benefits besides monthly salary for public hospitals was ~8 times the amount of public hospitals on average. A large part of the benefits were for engaging in special duties (34%) and bonuses (20%). It may be that public hospitals tend to be more lenient on their payment of benefits, while some private hospitals pay physicians by an annually fixed amount being stricter on their payments. However, doctors employed by public hospitals may face a different workload compared to doctors working in private hospitals. For example, public hospitals historically have undertaken the task of critical and emergency care in Yamagata prefecture. Our survey shows that in fact, 93% of emergency patients were taken by public hospitals in Yamagata prefecture.

We found that variables that we thought might decide hospital physician payment, such as physician demand and clinical experience did not show up in the final model. This may be due to the following reasons. 1) The employment of doctors traditionally has been decided by the local medical schools and there was little discussion about treatments of the employee. Working doctors themselves were quite indifferent about their own working conditions. The hospitals in this way could obtain a stable supply of doctors while the medical schools could gain prestige and power over the local medical community.(4) 2) The medical insurance reimbursement rates have been declining allowing hospitals a smaller amount to adjust physician salary despite the demands that they have.(10) Reports do show that the salary paid to doctors have been relatively stable over the past few years.(9) 3) The assignment of variables could not capture the relationship between these variables and doctor payment. Some of these variables were made into dummy variables during the data processing due to non-linear relationships and the small numbers of samples and information may have been lost. It has been reported that physician payment systems in a large proportion of Japanese hospitals are not performance-based but rather based on a fixed annual plan.(11)

The observation that hospitals located in MSA 2 and 3 tended to pay doctors more compared to those in MSA 1, may be due to the difficulties in fulltime employment of doctors in these rural areas despite their demands. This may be associated with the perceived disadvantages of attaining the latest medical technology, workload, lifestyle, and high-quality children's education in rural areas. This cannot be generally concluded though, because of the small number of private hospitals located in area 2 and 3 (actually only one hospital). Public hospitals were paying doctors more by adding benefits (mean amount 11416 thousand yen for MSA 2 or 3 versus 9246 thousand yen for MSA 1) besides the salary, which is not expected to change from area to area in public hospitals by large amount.

The puzzling inverse relationship between the number of inpatients per physician, the number of surgical operations and physician payment may related to the fact that traditionally the Japanese health insurance system has reimbursed more generously primary care, drugs and laboratory tests compared to acute high-tech in-patient care and surgical procedures.(12),(13) Hospitals with relatively more in-patients and surgical operations per doctor may have less to afford for increases in physician payment. It is known that in Japan physician specialists working in large hospitals that practice the latest treatment and medical technology earn less than their counterparts practicing primary care. It is assumed that there is a tradeoff between the social prestige that the physicians gain by working in these hospitals and their foregone income.(13) Moreover, Japanese patients have a preference for high-tech care and tend to concentrate in larger hospitals, in search of high quality care.(10) Our analysis suggest that doctors working in hospitals with more in-patients and more surgical operations per physician may be facing a heavier workload by treating more patients, some of them difficult to manage needing high-tech intensive care, but are paid less, compared to the physicians working in the relatively smaller less high-tech, less prestigious hospitals.

Average length of stay was also inversely related to physician payment. This may also be related to the health insurance system, since present health insurance reimbursement rates decline as admission periods get longer, there may be less incentive to increase physician salary in hospitals with patients that stay long. Historically some Japanese hospitals have taken the role of nursing facilities for the elderly.(4), (13) However, patients that stay longer may be patients that are medically difficult to manage and have little choice about the time and place of receiving medical care, which may further disadvantage physician payment by the hospital. We could not adjust for differences in case-mix between hospitals, which may have significant impact on this relationship between workload and payment.

The interesting and contrasting result of full time physicians per bed and staff per bed indicates a possible tradeoff relationship between the two. More full time physicians employed may have resulted in smaller payments simply because one doctor's share out of the hospital's salary pool diminished if the number of patients and intensity of care were the same, while replacement of physicians by other co-medical staff may have left room for larger physician payment due to their lower employment costs.

Our study is based on the survey conducted to all the hospitals with acute care beds in Yamagata prefecture. The hospitals that were excluded for the analysis, were all private, five of them residing in MSA 1, two of them in MSA 2 and 3 and two of them in MSA 4. The size of these hospitals ranged from small size with only a selected variety of services to medium size with a wide variety of specialties. The exclusion of these hospitals from our analysis may have introduced bias into our results. However, since there is no reason to believe that there are any unseen characteristics that this group of hospitals shares in common, we assume that the private hospitals left in the analysis may serve as a representative of private hospitals in Yamagata prefecture.

Medical school clinical departments may not be able to enjoy the power they have exercised on the employment of physicians in local hospitals for long. There has been a drastic change in the education system of medical school graduates in 2004, where graduates are allocated to hospitals by a matching system and not by intentions of the medical school.(10) The total effect of this new policy on the choice of workplace is not yet clear, but it can be naturally expected that graduates would tend to concentrate in large urban hospitals. Yamagata has recently organized a committee (*Zao Kyogikai*) consisting of members from the local government, medical school, and health care facilities within the prefecture to discuss a fair, efficient and transparent geographical positioning of physicians within the prefecture.

In summary, we found that physician payment tended to be associated with variables such as type of management, staff employed per bed, full time doctors employed per bed and average length of stay. Hospital location was found to have a significant effect. Variables expressing workload, number of in-patients per doctor and number of surgical operations per doctor, were inversely related. Variables that were expected to have an association with the hospital's decision for payment (physician demand, clinical experience) were excluded from the final model. These results suggest that hospital payment has adapted to physician preferences on workplace to some extent. Further research is needed to evaluate if these variations in payment are sufficient to alleviate the choice of workplace by physicians. To further address the problem of unbalanced distribution, 1) subsidizing scheme to increase physician income engaged in rural care should be considered, and If physician choices are indeed inelastic, 2) a work sharing scheme to relieve the anxiety of excessive hard work attached to rural care, and 3) a medical education and technical support system arranged by medical centers of the area for physicians to keep in touch with the latest treatments, may also be helpful.

## ***Acknowledgement***

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## *Reference*

[1] Japan Municipal Hospital Association Committee for Ensuring the Stable Supply of Physicians. Report on Action for Ensuring Stable Supply of Physicians (2004). (Available at http://www.jmha.or.jp/committee/kakuho.html) Accessed January 2006. [in Japanese]

[2] Matsuura Y, Takeuchi K, Hatano F. Report on the committee for training and securing the supply of health care workers. Hiroshima Igaku 2004;57(12):941-68. [in Japanese]

[3] Akagi H. Regional disparities in health care costs. Grant-in-Aid for Scientific Research for policy science by the Ministry of Health, Welfare and Labor. 1999. [in Japanese]

[4] Ikegami N, and Campbell JC. The art of balance in health policy: maintaining Japan's low-cost egalitarian system. New York: Cambridge University Press, 1998; 53-86.

[5] The report on The Survey of Trends in Hospital Patients and Health Care Providers in Yamagata Prefecture. Shougai Kyouiku To Chiiki Iryou 2005;Suppl 1:2-107. [in Japanese]

[6] Holford TR. Mulitvariate methods in epidemiology. New York: Oxford University Press, 2000; 163-204

[7] Hosmer DW, and Lemeshow S. Applied logistic regression. New York: Wiley-Interscience,. 2001;91-142.

[8] Kleinbaum DG, and Klein M. Logistic Regression. New York: Springer, 2003; 191-226.

[9]. Shiraga M. The salary of physicians and ensuring their stable supply. *Byoin* 2004;63(2):122-30. [in Japanese]

[10] Ikegami N, Campbell JC. Japan's health care system: containing costs and attempting reform. *Health Aff* 2004;23(3):26-36.

[11] All Japan Hospital Association Committee of Health Care Workers. Survey on the Salary of Health Care Workers. 2004. [in Japanese]

[12] Ikegami N, and Campbell JC. The art of balance in health policy: maintaining Japan's low-cost egalitarian system. New York: Cambridge University Press, 1998; 145-74.

[13] Yoshikawa A, Bhattacharya J, Yoshikawa A, Vogt WB. Health economics of Japan. Tokyo: University of Tokyo Press, 1996; 3-37.

(Figure1)

A map of Yamagata prefecture. Yamagata is split into 4 medical service areas, Murayama (MSA 1), Mogami (MSA 2), Okitama (MSA 3), and Shounai (MSA 4) by the government based on the everyday movement of its residents. Health care provision is planned by the local government based on these regional zones. The location of the provincial capital, Yamagata city and two other major cities, Sakata and Tsuruoka are shown. (Note that the borderlines of Sakata and Tsuruoka have recently changed due to merging with the surrounding municipalities.)

(Table 1)

The results in brief of *The Survey of Trends in Hospital Patients and Health Care Providers in Yamagata Prefecture*. Data concerning hospital structure and management, staffing levels, patient numbers and characteristics, physician payment and demand are shown. Mean and medians are shown for numerical items and proportions are shown for categorical items. Needed doctors: the number of urgently needed doctors for employment by the hospital, SD: standard deviation, ALOS: average length of stay, MSA: medical service area.

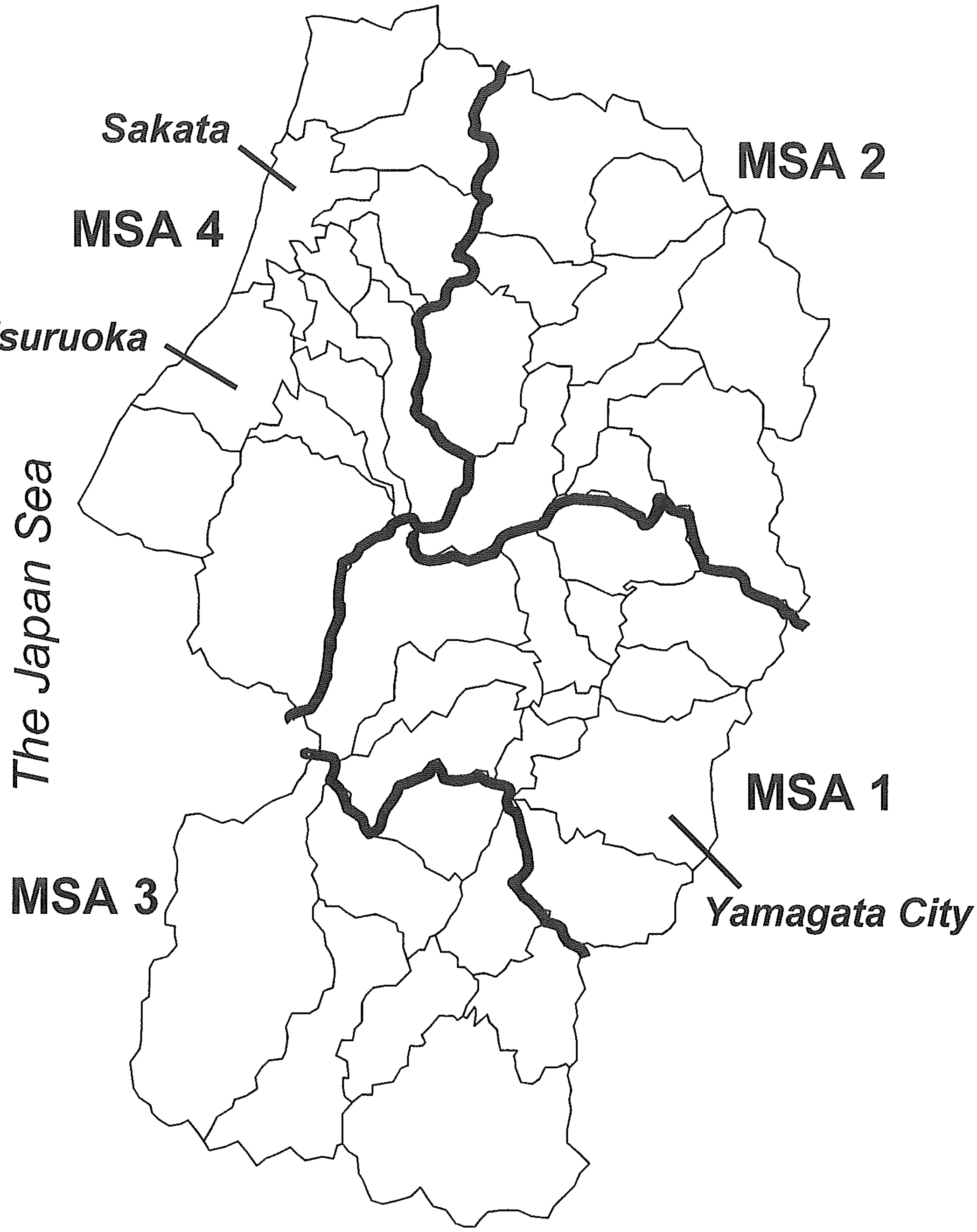
(Table 2)

The results of single variable linear regression. Each of the variables was fit into a linear regression model including location and type of management. The coefficient and its 95% confidence interval for each of the variables are shown. See the text for the details of the variables. MSA: medical service area.

(Table 3)

The final multi-variable linear regression model after variable selection. The model included these 5 variables not including location and type of management. The coefficient and its 95% confidence interval for all the variables are shown. See the text for the details of the variables and the model. MSA: medical service area.

(Figure 1)


Sakata
MSA 2
MSA 4
Tsuruoka
The Japan Sea
MSA 1
MSA 3
Yamagata City

(Table 1)

| items | mean or proportion | SD | median | unit |
|---|---|---|---|---|
| physician payment | 26776 | 19507 | 23980 | thousand yen / year |
| staff | 278.8 | 244.1 | 175.0 | persons |
| fulltime physician | 25.5 | 34.3 | 10.5 | persons |
| part time physician | 4.9 | 12.9 | 2.1 | persons |
| residents | 2.9 | 1.4 | 0.0 | persons |
| physicians from local medical school | 13.5 | 22.7 | 3.0 | persons |
| average age of physicians | 43.0 | 5.1 | 41.4 | years |
| average years of experience | 17.3 | 4.8 | 16.1 | years |
| needed physicians | 1.1 | 1.9 | 1.0 | persons |
| physicains that left job | 1.2 | 1.9 | 0.0 | persons / year |
| speciality services | 8.6 | 5.5 | 7.0 | services |
| in-patients | 192.3 | 166.2 | 126.0 | persons / day |
| out-patients | 449.4 | 388.0 | 240.5 | persons / day |
| emergency patients | 5199.7 | 7515.9 | 1308.0 | persons / year |
| persons for medical check-ups | 984.3 | 1600.1 | 313.5 | persons / year |
| beds | 233.4 | 190.1 | 157.0 | beds |
| % occupied beds | 80.7 | 15.0 | 85.7 | % |
| ALOS | 50.0 | 114.5 | 20.6 | days |
| surgical operations | 1114.9 | 1683.9 | 199.0 | operations / year |
| private | 30.9 | | | % |
| non-private | 69.0 | | | % |
| MSA 1 | 47.6 | | | % |
| MSA 2 | 9.5 | | | % |
| MSA 3 | 21.4 | | | % |
| MSA 4 | 21.4 | | | % |
| under 100 beds | 45.2 | | | % |
| 100~199 beds | 11.9 | | | % |
| 200~299 beds | 16.7 | | | % |
| 300~399 beds | 4.8 | | | % |
| 400~499 beds | 9.5 | | | % |
| 500 beds or over | 11.9 | | | % |
| resident training done | 45.2 | | | % |
| emergency hospital | 76.2 | | | % |

(Table 2)

| variable | β | 95%confidence interval | | | | | p value |
|---|---|---|---|---|---|---|---|
| staff per bed | 32.06 | [ | -42.93 | , | 107.05 | ] | 0.392 |
| full time pysicians per bed | -541.77 | [ | -977.08 | , | -106.47 | ] | 0.016 |
| part time physicians per bed | -215.72 | [ | -771.88 | , | 340.45 | ] | 0.198 |
| % physicians from local medical school | -46.34 | [ | -117.96 | , | 25.29 | ] | 0.134 |
| years of experience | 466.44 | [ | 26.46 | , | 906.41 | ] | 0.038 |
| wanted physicians per bed | 824.67 | [ | -739.27 | , | 2388.61 | ] | 0.292 |
| in-patients per physician | -204.03 | [ | -620.75 | , | 212.68 | ] | 0.327 |
| out-patients per physician | 171.89 | [ | 57.21 | , | 286.56 | ] | 0.004 |
| medical checkup patients per physician | 23.87 | [ | 9.03 | , | 38.70 | ] | 0.002 |
| surgical operations per physican | -83.17 | [ | -166.59 | , | 0.24 | ] | 0.051 |
| beds | -13.58 | [ | -22.71 | , | -4.45 | ] | 0.005 |
| percetage of occupied beds | -80.98 | [ | -207.87 | , | 45.91 | ] | 0.204 |
| average length of stay | -10.66 | [ | -26.37 | , | 5.06 | ] | 0.177 |
| one or more physician left job | -2451.06 | [ | -6359.35 | , | 1457.23 | ] | 0.212 |
| one or more emergency patient per day | 1533.71 | [ | -2553.76 | , | 5621.18 | ] | 0.452 |
| resident training done | -4289.40 | [ | -8501.59 | , | -77.21 | ] | 0.046 |
| MSA 2 or 3 | 5355.63 | [ | 1127.69 | , | 9583.57 | ] | 0.014 |
| MSA 4 | 3672.66 | [ | -1148.46 | , | 8493.78 | ] | 0.131 |

(Table 3)

| variable | β | 95% confidence interval | p value |
|---|---|---|---|
| staff per bed | 73.27 | [ 14.94 , 131.59 ] | 0.015 |
| fulltime physicians per bed | -1100.85 | [ -1523.57 , -678.13 ] | **<0.001** |
| inpatients per physician | -590.53 | [ -971.85 , -209.22 ] | 0.003 |
| surgical operations per physician | -83.45 | [ -148.65 , -18.26 ] | 0.014 |
| average length of stay | -17.61 | [ -29.71 , -5.51 ] | 0.006 |
| private hospital | -9895.23 | [ -13277.45 , -6513.01 ] | **<0.001** |
| MSA 2 or 3 | 3364.84 | [ 372.39 , 6357.29 ] | 0.029 |
| MSA 4 | 3332.99 | [ -132.38 , 6798.35 ] | 0.059 |

# 山形県の高額医療機器の配置に関する研究

分担研究者　河原和夫　東京医科歯科大学大学院医歯学総合研究科政策科学分野
研究協力者　竹中英仁　東京医科歯科大学大学院医歯学総合研究科政策科学分野
研究協力者　山内和志　東京医科歯科大学大学院医歯学総合研究科政策科学分野

研究要旨

高額医療機器の配置においては、限りある医療費の中で、利用者に不便がないように適正に配置されることが重要である。また、過剰検査をはじめとして、利用者の病院に対する不信感などを払拭するためにも、病院は説明責任を果たすことが要求されている。山形県の急性期病院の高額医療機器の配置状況と平成15年度実績の件数、入院患者数、外来患者数、救急患者数などをアンケート調査したデータから、現状の分析を試みた。52種類の医療機器について分析した。1台あたり患者数と1台あたり実施件数の間に強い正の相関がみられたのは全身用X線CT、上部消化管ファイバースコープ、尿路ファイバースコープ、また、人工透析装置については負の相関が見られた。今後の全国規模での同様の比較などを通して、高額医療機器の適正配置を目指し、へき地医療体制の充実に役立つと考える。

## A. 目的

日本では、昭和43年に病床規制が敷かれた歴史があるが、当時、一度は議論にあがった医療機器の配置に関する規制がないまま、各病院はそれぞれが高額医療機器の導入を行っている。医療費の適正な配分を考えると、ひとつは必要性が高いにもかかわらず、不足している機器の早期導入と、もうひとつは過剰な配置をさけるべく、計画的な導入を図り、地域医療での病院連携から医療機器の共有利用も念頭におくことが重要である。

今回、山形県内の51の急性期病院に対して、外来患者数と、医療機器の配置台数と実施件数（平成15年度実績）についてのアンケートを行い、地域別、病院別の現状分析を試みた。

## B. 方法

「山形県内医療施設のおける患者動向及び医療従事者等に係る現状調査」は2005年1月24日から2月25日にかけて、山形大学医学部及び山形県健康福祉部が山形県内の一般病床を有する51の医療施設に対して、アンケート調査を郵送で行った。45施設からの回答（回収率88.2%）が得られた。高額医療機器の保有状況と実施件数の回答と、各施設の利用者数の指標である外来患者数の回答が得られなかった病院のデータは整合性を考慮して、分析から除外した。すると28病院施設のデータが得られた。高額医療機器1台あたりの外来患者数と1台あたりの実施件数についての相関関係を分析した。なお、52種類の医療機器の中で18の医療機器については、データ数が少なかった（4データ未満）ために、分析の対

象としなかった。なお計算はExcel 2003 を利用して行った。

C. 結果

高額医療機器 1 台あたりの実施件数（平成 15 年度実績）と 1 台あたりの外来患者数の相関関係をそれぞれ分析した。表 1 に医療機器別のデータ数と相関係数を示した。データ数が 10 以上存在した医療機器は 16 機種であった。そのうち、強い相関（相関係数 0.5 以上）がみられたのは、12 機種であった。図 1 から図 4 までに散布図として、それぞれ示した。そして、図 5 には、相関係数が 0.5 以下と負の相関を示した 4 機種についての散布図を示した。また、データ数の制約から分析しなかった 18 の医療機器は相関係数の欄にＮＡ（not available）として示した。（表 1 参照）

16 機種の中では、上部消化管ファイバースコープ、気管支ファイバースコープ、ＭＲＩ、ヘリカル（スパイラル）ＣＴは強い相関（ｒ＞0.7）を示した。ＲＩ診断装置（シンチレーションカメラ等）、心エコー、脳波計、腹部エコー、トレッドミル、血液ガス測定装置、生化学自動分析装置、長時間心電図分析装置はやや強い相関（ｒ＞0.5）を示した。マンモグラフィー、大腸ファイバースコープ、骨塩量測定装置はとくに相関は見られなかった。人工透析装置については、負の相関が見られた。

D. 考察

今回はデータの整合性から、外来患者数を病院の利用者数の一指標として、採用し、多くのサンプル数を得るべく選んだが、医療機器の実施件数においては、健診や人間ドックからの実施件数なども含まれているし、入院患者や救急患者に対する実施件数も含まれていることでの限界を指摘しておきたい。ただ、外来患者数がそれぞれの病院の集客の大小を示すものであり、その中から多数の医療機器の対象者が存在するので、今回の分析においては、妥当であると考える。

標準的な散らばりから大きくかけ離れたデータを示す病院については、詳しく調査する必要がある。その過程で、あまりにも利用者数に対して実施件数が多く、「過剰検査」の疑いがあるというような状態があぶりだされることもある。

上部消化管ファイバースコープでの分析では、ある病院のデータは、外来患者数は少ないのに、実施件数は多いというのが示されたが、これは当該病院が消化器を専門にしている病院でもあることに起因すると考えられる。また、1 台あたりの実施件数がかけ離れて多い病院のデータが存在する（1 台あたり実施件数 2723 件）が、事実確認を含めて詳しく調査する必要があるといえる。（図 1 参照）

気管支ファイバースコープ（図 2 参照）においても、ひとつの病院で実施件数 2511 件というかけ離れたデータがある。このデータについても、事実確認を含めて詳しく調査する必要がある。

負の相関が見られた人工透析装置について、考察する。人工透析の必要な患者がすでに存在して、人工透析を受けるために、その施設に訪れる。施設においては、人工透析装置の台数と一日あたり 1-2 人の患者の人工透析（最大でも一日あたり 3 人が限度）を実施することで、実施対象者の数に

も限界がある。これらが条件と考えられる。検査のために医療機器を使うという範疇に入らない医療機器であるため、他の医療機器と比較するのは適切でないと考えられる。むしろ注目するべきところは、1 台あたりの実施件数の多い病院での人工透析装置の品質確保であり、実施件数の少ない病院での有効な利用に向けての、腎臓内科医の確保やまた人工透析の提供病院の集中化などが重要な今後の課題として考える必要がある。（図 5 参照）

E. まとめ

医療機器は、おおむね 7-8 年での減価償却をおこなっているので、診療報酬の保険点数から、年間の減価償却費をカバーする件数も試算できる。もちろん、付随する機器のメンテナンス費用、人件費などの他の原価計算も考慮する必要がある。

高額医療機器の移送には、大きな費用がかかる。また廃棄するためにも、多大な費用がかかるために、置きっ放しされている医療機器も存在するといわれる。放射線元素の取り扱いなども含め、CT などでは数百万円単位の移送費がかかるために、一度設置すると中古市場に出しにくくなる、また利用価値があるときに中古市場での価格が形成されるが、時間が経ちすぎて、結局、価値が著しく減価して、廃棄処分にしかならないことも多い。2005 年 4 月 1 日の改正薬事法での、中古医療機器の品質の確保の徹底をすすめる趣旨から、製造業者の点検と整備が義務付けられることで、目先の中古医療機器の流通市場は弱含んでいるのが現状である。ただ、常に高額医療機器を新品で購入する、あるいは、リース会社を通じて設置するという病院のこれまでの姿勢だけでは、医療費削減の流れの中では簡単には進まない。これまで築き上げた社会資本の有効な利用という観点からも、中古機器市場の発展を期待したい。

分析結果から、高額医療機器の実施件数の少ない病院については、高額医療機器の効率的な利用がなされていないことが指摘される。理由は、1）担当医師の不足、2）患者のニーズが高くない、などが考えられる。対応策としては、1）医師の確保、2）当該医療機器の撤廃、3）貸し出しによる有効活用、などがあげられる。今後の調査として、医療機器の配置とその機器の担当の医師の人員充足調査を行うことも重要であると考える。

表1 高額医療機器一台あたりの実施件数と外来患者数の相関(1)

| | 医療機器リスト | データ数 | 相関係数 |
|---|---|---|---|
| 1 | 全身用X線CT | 9 | 0.903 |
| 2 | 上部消化管ファイバースコープ | 22 | 0.878 |
| 3 | 尿路ファイバースコープ | 7 | 0.874 |
| 4 | 気管支ファイバースコープ | 14 | 0.830 |
| 5 | 手術用顕微鏡システム | 7 | 0.817 |
| 6 | 磁気共鳴診断装置(MRI) | 15 | 0.804 |
| 7 | ヘリカル(スパイラル)CT | 15 | 0.769 |
| 8 | コンピューテッドラジオグラフィー装置 | 8 | 0.735 |
| 9 | 心臓カテーテル | 6 | 0.694 |
| 10 | RI診断装置(シンチレーションカメラ等) | 10 | 0.691 |
| 11 | 心エコー | 19 | 0.687 |
| 12 | 脳波計 | 15 | 0.670 |
| 13 | 腹部エコー | 16 | 0.669 |
| 14 | トレッドミル | 15 | 0.664 |
| 15 | デジタル減算血管撮影法(DSA) | 6 | 0.649 |
| 16 | 血液ガス測定装置 | 21 | 0.614 |
| 17 | 生化学自動分析装置(12ﾁｬﾝﾈﾙ以上) | 16 | 0.605 |
| 18 | 長時間心電図分析装置 | 13 | 0.597 |
| 19 | 乳房X線撮影システム(ﾏﾝﾓｸﾞﾗﾌｨｰ) | 16 | 0.491 |
| 20 | 心細動除去装置 | 8 | 0.488 |
| 21 | 大腸ファイバースコープ | 22 | 0.428 |
| 22 | リニアック | 7 | 0.306 |
| 23 | 腹部血管撮影装置 | 6 | 0.273 |
| 24 | 循環器系X線診断装置 | 6 | 0.183 |
| 25 | 分娩監視装置 | 6 | 0.092 |
| 26 | 骨塩量測定装置 | 12 | 0.022 |
| 27 | 体外受精・顕微授精システム | 4 | 0.005 |