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Defensive medicine practices among gastroenterologists in Japan

Toru Hiyama, Masaharu Yoshihara, Shinji Tanaka, Yuji Urabe, Yoshihiko Ikegami, Tatsuma Fukuhara, Kazuaki Chayama

Toru Hiyama, Masaharu Yoshihara, Health Service Center, Hiroshima University, Higashihiroshima, Japan

Shinji Tanaka, Department of Endoscopy, Hiroshima University Hospital, Hiroshima, Japan

Yuji Urabe, Yoshihiko Ikegami, Tatsuma Fukuhara, Kazuaki Chayama, Department of Medicine and Molecular Science, Division of Frontier Medical Science, Programs for Biomedical Research, Graduate School of Biomedical Sciences, Hiroshima University, Hiroshima, Japan

Correspondence to: Toru Hiyama, MD, PhD, Health Service Center, Hiroshima University, 1-7-1 Kagamiyama, Higashihiroshima 739-8521, Japan. tohiyama@hiroshima-u.ac.jp

Telephone: +81-82-4246191 Fax: +81-82-4227156

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potentially serious implications regarding costs, access, and both technical and interpersonal quality of care.

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Key words: Defensive medicine; Gastroenterologist; Japan; Survey; Clinical practice

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Abstract

AIM: To clarify the prevalence of defensive medicine and the specific defensive medicine practices among gastroenterologists in Japan.

METHODS: A survey of gastroenterologists in Hiroshima, Japan, was conducted by mail in March 2006. The number of gastroenterologists reporting defensive medicine behaviors or changes in their scope of practice and the reported defensive medicine practices, i.e., assurance and avoidance behaviors, were examined.

RESULTS: A total of 131 (77%) out of 171 gastroenterologists completed the survey. Three (2%) respondents were sued, and most respondents (96%) had liability insurance. Nearly all respondents (98%) reported practicing defensive medicine. Avoidance behaviors, such as avoiding certain procedures or interventions and avoiding caring for high-risk patients, were very common (96%). Seventy-five percent of respondents reported often avoiding certain procedures or interventions. However, seasoned gastroenterologists (those in practice for more than 20 years) adopted avoidance behaviors significantly less often than those in practice for less than 10 years. Assurance behaviors, i.e., supplying additional services of marginal or no medical value, were also widespread (91%). Sixty-eight percent of respondents reported that they sometimes or often referred patients to other specialists unnecessarily.

CONCLUSION: Defensive medicine may be highly prevalent among gastroenterologists throughout Japan, with

INTRODUCTION

The number of negligence claims against physicians is increasing continuously, not only in Western countries but also in Japan^[1-9], where a 10-fold increase in malpractice litigations, from 102 to 1019 cases per year, was observed between 1960 and 2003^[7]. Although the number of medical lawsuits in Japan is relatively small in comparison to that in the United States of America (USA), the situation in Japan is gradually becoming more like that in the USA^[10,11].

Defensive medicine is a deviation from sound medical practice that is induced primarily by the threat of liability claims^[12,13]. Defensive medicine consists of two general behaviors. One is assurance behavior (sometimes called “positive” defensive medicine), which involves supplying additional services of marginal or no medical value with the aim of reducing adverse outcomes, deterring patients from filing malpractice claims, or persuading the legal system that the standard of care is met. The other is avoidance behavior (sometimes called “negative” defensive medicine), which refers to physicians’ efforts to distance themselves from sources of legal risk. It was recently reported that nearly all (93%) physicians in the USA practice defensive medicine^[12]. Defensive medicine has been reported in other countries^[14,15], but the prevalence and specific behaviors of defensive medicine in Japan, particularly among gastroenterologists, remain unclear. Therefore, we studied the prevalence of defensive medicine and specific defensive behaviors in a proportion of gastroenterologists in Japan.

MATERIALS AND METHODS

Survey questionnaire and administration

A random sample of 171 Japanese gastroenterologists was drawn from the Hiroshima Medical Association Physician File. A questionnaire with items pertaining to clinical decisions, liability insurance, and malpractice claims, was developed. Respondents were asked to rate on a four-point scale (never, rarely, sometimes, often) how often concerns about malpractice liability claims caused them to engage in each of 4 forms of assurance behavior: (1) order more tests than medically indicated, (2) prescribe more medications than medically indicated, (3) refer patients to specialists unnecessarily, and (4) suggest invasive procedures against their professional judgment. Respondents used the same scale to rate the frequency with which they practiced two forms of avoidance behavior: (1) avoid conducting certain procedures/interventions, and (2) avoid caring for high-risk patients^[12]. In addition, respondents were asked in consecutive questions whether they had reduced or eliminated various high-risk aspects of their medical practice in the last 3 years.

The questionnaire was mailed in March 2006 to the 171 randomly selected gastroenterologists in Hiroshima, Japan. One hundred and thirty-one (77%) of these gastroenterologists completed the survey.

Statistical analysis

Survey responses were analyzed in relation to the number of years respondents had been in practice or to the type of practice. Differences between groups were analyzed by chi-square test or Fisher's exact probability test. $P < 0.05$ was considered statistically significant.

RESULTS

Respondent characteristics

The characteristics of respondents are shown in Table 1. Respondents were experienced gastroenterologists (82% with > 9 years in practice). They practiced in hospitals (81%), solo settings (14%), and other contexts (5%). Two percent of respondents had been sued in the past. Most respondents (96%) had obtained liability insurance, either directly from a commercial carrier (93%) or through a hospital (7%). Most respondents perceived their insurance premiums to be financially burdensome, with 33% classifying the burden as major.

General findings

Most respondents (98%) reported that they sometimes or often engaged in at least one of the six forms of defensive medicine outlined in the survey.

Assurance behavior

One-hundred and nineteen (91%) of the 131 respondents reported that they sometimes or often engaged in at least one of the four forms of assurance behavior. Sixty-eight percent of respondents reported that they sometimes or often referred patients to other specialists unnecessarily (Table 2). Fifty-four percent of respondents reported that they sometimes or often suggested invasive procedures

Table 1 Characteristics of gastroenterologists surveyed ($n = 131$)

Characteristic	Gastroenterologists n (%)
Sex	
Male	110 (84)
Female	21 (16)
Years in practice	
1-10	33 (25)
11-19	67 (51)
20-29	26 (20)
30	5 (4)
Practice type	
Solo	18 (14)
Hospital clinic	107 (81)
Other	6 (5)
Perceived burden of liability insurance premiums	
Not a burden	14 (11)
Minor	17 (13)
Medium	57 (43)
Major	3 (33)
Claims experience	
Sued	
≤ 3 yr ago	1 (1)
> 3 yr ago	2 (1)
Never sued	128 (98)

Table 2 Frequency of assurance and avoidance behaviors among gastroenterologists surveyed

	Often n (%)	Never/rarely n (%)
Assurance behavior		
Order more tests than medically indicated	7 (5)	83 (64)
Prescribe more medications (e.g., antibiotics) than medically indicated	0 (0)	110 (84)
Refer patients to other specialists unnecessarily	36 (27)	41 (32)
Suggest invasive procedures (e.g., biopsy) to confirm diagnosis	21 (16)	61 (47)
Avoidance behavior		
Avoid certain procedures or interventions	24 (18)	32 (24)
Avoid caring for high-risk patients	27 (21)	32 (24)

that were unwarranted. Thirty-six percent of respondents reported that they sometimes or often ordered more diagnostic tests than medically indicated. Sixteen percent of respondents reported sometimes or often prescribing more medications than were medically indicated.

Avoidance behavior

One-hundred and twenty-six (96%) of the 131 respondents reported that they sometimes or often engaged in at least one of the two forms of avoidance behavior. Seventy-five percent of respondents reported that they often avoided certain procedures or interventions (Table 2). Fifty-three percent of respondents reported that they sometimes or often avoided caring for high-risk patients.

Assurance and avoidance behaviors in relation to years in practice

The relation between assurance and avoidance behaviors and years in practice is shown in Table 3. Seasoned

Table 3 Relation between assurance and avoidance behaviors and years in practice

	Number of years in practice	Often/sometimes n (%)
Assurance behavior		
Order more tests than medically indicated	1-9	14/33 (42)
	10-19	26/67 (39)
	20+	8/31 (26)
Prescribe more medications (e.g., antibiotics) than medically indicated	1-9	7/33 (21) ^a
	10-19	13/67 (19) ^c
	20+	1/31 (3)
Refer patients to other specialists unnecessarily	1-9	24/33 (73)
	10-19	47/67 (70)
	20+	19/31 (61)
Suggest invasive procedures (e.g., biopsy) to confirm diagnosis	1-9	21/33 (64)
	10-19	36/67 (54)
	20+	13/31 (42)
Avoidance behavior		
Avoid certain procedures or interventions	1-9	28/33 (85)
	10-19	52/67 (78)
	20+	19/31 (61) ^e
Avoid caring for high-risk patients	1-9	28/33 (85)
	10-19	52/67 (78)
	20+	19/31 (61) ^e

^aP = 0.033, ^cP = 0.027 vs 20 yr in practice; ^eP = 0.032 vs 1-9 yr in practice.**Table 4** Relation between assurance and avoidance behaviors and practice types

	Practicetype	Often/sometimes n (%)
Assurance behavior		
Order more tests than medically indicated	Solo	2/18 (11) ^a
	Hospital clinic	43/107 (40)
	Other	3/6 (50)
Prescribe more medications (e.g., antibiotics) than medically indicated	Solo	1/18 (6)
	Hospital clinic	19/107 (18)
	Other	1/6 (17)
Refer patients to other specialists unnecessarily	Solo	18/18 (100) ^b
	Hospital clinic	69/107 (64)
	Other	3/6 (50)
Suggest invasive procedures (e.g., biopsy) to confirm diagnosis	Solo	10/18 (56)
	Hospital clinic	57/107 (53)
	Other	3/6 (50)
Avoidance behavior		
Avoid certain procedures or interventions	Solo	12/18 (67)
	Hospital clinic	82/107 (77)
	Other	5/6 (83)
Avoid caring for high-risk patients	Solo	14/18 (78)
	Hospital clinic	80/107 (75)
	Other	5/6 (83)

^aP = 0.013, ^bP = 0.0006 vs hospital clinic.

gastroenterologists (20 years in practice or more) prescribed medications that were not medically indicated significantly more often than other gastroenterologists ($P = 0.033$ by Fisher's exact probability test *vs* gastroenterologists in practice for 1-9 years and $P = 0.027$ *vs* gastroenterologists in practice for 10-19 years). Seasoned gastroenterologists were also significantly less likely than those who had been in practice for fewer than 10 years to avoid certain procedures or interventions [19/31 (61%) *vs* 28/33 (85%), $P = 0.032$ by Fisher's exact probability test] and to avoid caring for high-risk patients [19/31 (61%) *vs* 28/33 (85%), $P = 0.032$ by Fisher's exact probability test].

Assurance and avoidance behaviors in relation to practice type

Adoption of assurance and avoidance behaviors in relation to practice types is shown in Table 4. Gastroenterologists in solo practices ordered significantly less often more tests than medically indicated than gastroenterologists in hospital clinics [2/18 (11%) *vs* 43/107 (40%), $P = 0.013$ by Fisher's exact probability test]. However, they referred patients to other specialists unnecessarily significantly more often than those in hospital clinics [18/18 (100%) *vs* 69/107 (64%), $P = 0.0006$ by Fisher's exact probability test].

Most recent defensive act

Ninety percent (118 of the 131) of gastroenterologists who reported practicing defensive medicine detailed their most recent defensive act. Specific practices reported by

Table 5 Specific defensive medicine practices among gastroenterologists ($n = 118$)

Most recent act of defensive medicine	Gastroenterologists n (%)
Recorded interaction with patient in considerable detail	41 (35)
Referred patient to another physician	39 (33)
Avoided certain procedure or intervention	25 (21)
Ordered more tests than medically indicated	13 (11)

these respondents are summarized in Table 5. The defensive act most frequently reported was recording interactions with a patient in considerable detail (35%). This was followed by unnecessary referral (33%), avoiding certain procedures or interventions, and ordering an unnecessary test (11%).

DISCUSSION

We found that defensive medicine practices were as widespread among the gastroenterologists we surveyed in Japan as they are among physicians in the USA. In the USA, 88% of physicians have a lawsuit filed against them, reflecting the high rate of litigation in that country^[12]. Studert *et al*^[12] reported that 93% of physicians in the USA practice defensive medicine, and that assurance behaviors, such as ordering tests, performing diagnostic procedures, and referring patients for consultation, are very common (92%). In Japan, the number of negligence claims against

gastroenterologists is still very limited. Only 2% of our respondents have been sued, a finding similar to that reported by the Hiroshima Prefectural Medical Association from a survey of all its members^[16]. Despite the relatively low frequency of lawsuits, nearly all (98%) gastroenterologists we surveyed reported practicing defensive medicine, and both assurance and avoidance behaviors were very common (91% and 96%, respectively). This may be due to the continuous increase in the number of litigations. With sensational mass media reporting on medical malpractice in Japan, gastroenterologists in Japan have begun to focus on risk management activities, leading them to practice defensive medicine^[7,17]. These findings support the idea that individual physicians' propensity to practice defensive medicine is not associated with objective measures of physicians' exposure to and experience with liability claims^[18-20]. It has been suggested that the signal to practice defensive medicine may have been broadcasted so widely that individual experience is overshadowed by collective anxiety^[18].

Although the prevalence of defensive medicine in Japan is similar to that in the USA, individual components of this trend differ between the two countries. In a USA study of physicians in 6 specialties (not including gastroenterology)^[12], almost one-third of respondents reported that they often describe more medications than medically indicated, whereas only 16% of our survey respondents, all gastroenterologists, reported doing so. In addition, 32% of physicians in the USA often suggest invasive procedures to confirm diagnoses, whereas only 16% of gastroenterologists we surveyed did so. Our findings suggest that assurance behavior is less prevalent among gastroenterologists in Japan than among physicians in the USA. In contrast, our findings suggest that the prevalence of avoidance behavior among gastroenterologists in Japan is similar to that among physicians in the USA. This may be due to differences in the structure of the medical economic system between the two countries^[21]. In Japan, medical examination fees are considerably lower than those in the USA. Therefore, physicians in Japan may be more apt to suggest invasive procedures to confirm diagnoses.

Avoidance behaviors we surveyed were significantly less common among seasoned gastroenterologists than among those in practice less than 10 years. It is not surprising that less experienced physicians tend to avoid difficult procedures and interventions and caring for high-risk patients. It is reasonable that high-risk patients should be treated by fully experienced doctors.

Respondents who worked in hospital clinics ordered more tests than medically indicated significantly more often than respondents in solo practices. In Japan, patients desiring a thorough examination tend to visit a hospital clinic. To meet patients' expectations, doctors in hospital clinics may order more tests than medically indicated. However, doctors in hospital clinics reported referring patients to other specialists unnecessarily less frequently than doctors in solo practices. Doctors in hospital clinics may refer less frequently because of easy access to specialized examinations or to other specialists, especially in general hospitals.

Our study was limited in several ways. First, measure-

ment and identification of defensive medicine by the physicians themselves are difficult because distinctions between inappropriate and appropriate care are not clear in many clinical situations^[22]. Moreover, it can be difficult to disentangle liability-related motivational factors from other factors that influence clinical decision-making, such as physicians' general desire to meet patients' expectations, preserve trust, and avoid conflict^[23,24]. To the extent that the responding gastroenterologists attributed their decisions to liability concerns when in fact they were driven primarily by other considerations, our results are exaggerated. Second, the gastroenterologists' self-reports of defensive medicine may have been biased toward giving a socially desirable response or achieving political goals. This may have led respondents to overestimate the frequency of their adoption of forms of defensive medicine.

An increased incidence of defensive medical practices is part of the social cost of a health-care system. The most frequent form of defensive medicine we found is suggestion of invasive procedures to confirm diagnoses, which seems not only wasteful but also likely to increase the risks of medical complications. Efforts to reduce the practice of defensive medicine in Japan should focus both on educating patients and gastroenterologists regarding appropriate care in the gastroenterological context that most commonly prompts defensive medicine, and on developing and disseminating clinical guidelines that target common defensive practices.

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COMMENTS

Background

The prevalence of defensive medicine and the specific defensive medicine practices among gastroenterologists in Japan are unclear.

Research frontiers

Two percentage respondents have been sued, and most respondents (96%) had liability insurance. Nearly all respondents (98%) reported practicing defensive medicine, and avoidance behaviors, such as avoiding certain procedures or interventions and avoiding caring for high-risk patients, were very common (96%). Defensive medicine may be highly prevalent among gastroenterologists throughout Japan, with potentially serious implications regarding costs, access, and both technical and interpersonal quality of care.

Applications

Efforts to reduce the practice of defensive medicine in Japan should focus both

on educating patients and gastroenterologists regarding appropriate care in the gastroenterological context that most commonly prompts defensive medicine, and on developing and disseminating clinical guidelines that target common defensive practices.

Terminology

Defensive medicine, a deviation from sound medical practice, is induced primarily by the threat of liability claims.

Peer review

This study is interesting and provides useful information on the characteristics of defensive medicine among gastroenterologists in Japan.

S- Editor Liu Y L- Editor Wang XL E- Editor Bi L