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Alimentary Tract

Defensive medicine practices among gastroenterologists in Lombardy: Between lawsuits and the economic crisis

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ABSTRACT

Background: Defensive medicine is becoming more frequent behaviour and has an impact on the economic 'health' of national healthcare systems.
Aim: The aim of this study was to clarify the impact of defensive medicine on gastroenterological practices in Lombardy.
Methods: Gastroenterologists attending the Lombardy Annual Gastroenterological Conference received a questionnaire based on multiple choice tests and visual analogue scales. The questionnaire was divided into three parts evaluating the respondent's characteristics, the number of procedures prescribed, and the percentage of those performed with a defensive purpose.
Results: Sixty-four of 107 participants (60%) completed the questionnaire, 94% of whom reported practising defensive medicine. The percentage of defensively requested procedures amounted to 18% of all digestive endoscopies, 8.9% of abdominal ultrasonography scans, 4.9% of abdominal computed tomography or magnetic resonance scans, and 12.2% of all consultations. The total number of defensive procedures prescribed per month by the participants was 878, and 31.7% of the performed procedures ($n = 4897$) were reported to defensively based. On the basis of the 2012 regional reimbursement fees, the yearly cost of defensive procedures prescribed and/or performed by all gastroenterologists in Lombardy was estimated to be € 8,637,835.
Conclusions: Our findings indicate that defensive medicine profoundly affects current medical practices among gastroenterologists, and has a considerable economic impact.

1. Introduction

Patient's rights have correctly been given greater attention over recent years as a result of a marked improvement in the quality of medical counselling and increased awareness of the need to ensure correct and appropriate diagnostic investigations and therapeutic interventions. On the other hand, the rapidly increasing risk of litigation (not always aimed at obtaining justice) has fuelled the tendency of practitioners to prescribe medical tests aimed at reducing the probability of malpractice claims [1–3]. This "defensive medicine" (DM) represents a deviation from sound medical practice that is primarily induced by the threat of liability [4,5].

DM consists of two main behaviours, one 'assuring' (sometimes called positive DM) and the other 'avoiding' (sometimes called negative DM) [6]. The former involves requests for additional diagnostic tests and procedures, consultations or therapies of little or no medical value, but simply aimed at deterring patients from filing malpractice or negligence suits and/or persuading the legal system that the standard of care has been respected. The latter refers to physicians' attempts to avoid critically ill patients or high-risk procedures as they are burdened by a high risk of subsequent legal action [7].

The importance of DM attitudes is clearly related to the recent dramatic increase in medical claims, which have been responsible for an enormous number of medical lawsuits in a number of countries (UK, Australia, Japan) that are rapidly approaching the negative record of the USA, where 88% of physicians are subject to at least one claim during their professional career [6–9]. This situation also accounts for the explosion in insurance premiums,

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which have sky-rocketed since 2000 with annual increases of 30%: for example, the annual premium for an obstetrician in Florida has increased from $143,000 to $203,000 [7]. As a consequence, physicians have gradually become used to ordering tests and procedures primarily aimed at avoiding negligence claims rather than pursuing their patients' interests, and creating the social problem of the costs of investigations that are not clinically necessary, but may also be dangerous for the patients.

DM-based practice is already substantial problem in the USA, as shown by the Pennsylvanian study of Studdert et al. [10] in which 93% of physicians working in high-risk specialties (not including gastroenterology) declared that DM was common in their clinical practices. However, it has now reached worldwide dimensions, as demonstrated by the Japanese study of Hiyama et al. [4], who found that DM is frequent among Japanese gastroenterologists, and by a recent report from the Physicians' Corporation of Milan (OMCEO Milan, Italy), which is fully consistent with a rapidly increasing frequency of DM practices among general practitioners [11].

This may have a profound effect on the costs, accessibility and quality of a national healthcare system, as is clearly suggested by a recent estimate published by Italy's "Court of Accounts", the judicial body that financially audits the executive branch of government, which reported overall healthcare expenditure of € 115 billion (i.e. 7.2% of Italy's gross domestic product [GDP]) in 2011, of which DM may account for up to 10% [11]. In addition to the economic aspect, DM may also be closely associated with burn-out syndrome, a stressful working condition affecting everyday medical practice [5].

As there is a lack of data about the impact of DM on medical practices in Italy, the local frequency and economic importance of DM among gastroenterologists is completely unknown. The aim of this study was to investigate the situation in Lombardy, the largest Region in northern Italy with a total number of 9,992,548 inhabitants (i.e. nearly 16% of the entire population), and the leading contributor to the country's GDP [12,13].

2. Materials and methods

2.1. Questionnaire

During the 2011 Lombardy Annual Gastroenterology Conference held by the Federation of Italian Gastroenterological Societies (FISMAD), an anonymous questionnaire was distributed to the participating gastroenterologists. It was divided into three parts. The first concentrated on the respondent's working experience and setting(s), the number of procedures (i.e. upper and lower gastrointestinal tract endoscopies, abdominal ultrasound scans (AbdUSs) and consultations) carried out per month, and the type of employment contract (i.e. occasional or permanent). The second evaluated the number of examinations (i.e. upper and lower gastrointestinal tract endoscopies, abdominal ultrasonography, computed tomography (CT) and/or nuclear magnetic resonance (MR) scans, and consultations) prescribed on the basis of MD and the number performed by the specialist for the same purpose. The third evaluated the mechanisms defence by means of three questions: (a) How much are you frightened of possible litigation? (b) How much do you feel supported and protected by the organisation you usually work for? (c) How much has your defensive attitude been influenced by your contract? These were answered using 10 cm long visual analogue scales (VAS), with 4 taken as the cut-off value [14].

The study was carried out in accordance with the current Italian laws and regulations governing personal privacy.

Table 1
Work settings of the 64 gastroenterologists responding to the administered questionnaire.

Working characteristics	#	(%)
Hospital setting		
Public	35	(54.6)
Private	15	(23.4)
University	13	(20.4)
Solo	1	(1.6)
Unit setting		
Gastroenterology	28	(43.7)
Endoscopy	18	(28.2)
Internal medicine	13	(20.3)
Hepatology	1	(1.6)
Other	4	(6.2)

2.2. Cost analysis

The cost analysis was based on the 2012 fees reimbursement list of Lombardy's regional healthcare system. The overall costs induced by DM in local gastroenterological practice were estimated by multiplying the cost of reimbursement of a single examination by the number of procedures prescribed for defensive purposes.

2.3. Statistical analysis

The data are expressed as mean values ± standard deviation (SD) or median values and range, as appropriate. The subgroups were compared using the chi-squared or Fisher's exact test (GraphPad Prism software, La Jolla, CA, USA). A p value of <0.05 was considered significant.

3. Results

3.1. Respondents' profile

Of the 170 gastroenterologists currently working in Lombardy, 107 (63%) attended the 2011 FISMAD conference and received the questionnaire, and 64 (60%) completed and returned it: 42 males and 22 females (66% vs. 34%) with a median age of 47.1 years (range 30–63) and a mean post-specialisation experience of 17.1 ± 9.7 years. Thirty-five were working at tertiary hospitals, 13 at university hospitals, 16 in outpatient clinics, and one working alone. The survey therefore covered 37.6% of Lombardy's gastroenterologists, whose characteristics are shown in Table 1. Forty-eight (75%) had permanent employments, and 16 (25%) were working on occasional terms. The 64 respondents as a whole performed 6665 consultations, 3975 colonoscopies, 4210 esophagogastroduodenoscopies (EGDs), and 583 AbdUSs per month, the corresponding mean values per gastroenterologist were 104.1 ± 100.5 consultations, 62.1 ± 52.1 colonoscopies, 65.7 ± 54.3 EGDs, and 9.1 ± 34.5 AbdUSs. The total number of investigations requested per month were 924 colonoscopies, 985 EGDs, 1353 AbdUSs, 431 abdominal CT or nuclear MR scans, and 911 consultations; the corresponding mean values per gastroenterologist were 14.4 ± 13.8 colonoscopies, 15.3 ± 13.9 EGDs, 21.1 ± 17.3 AbdUSs, 6.7 ± 5.9 abdominal CT or MR scans, and 14.2 ± 26.8 consultations.

3.2. Impact of DM-oriented medical practices

When asked to indicate the clinical criteria (guidelines, personal experience, DM or other) on which their daily practice was usually based, most of the respondents (92.8%) declared that they made clinical choices on the basis of various factors, including DM. Three specialists (4.7%) said they strictly followed the current pertinent international guidelines, two (3.1%) that they exclusively adhered

Table 2
Prescribed and perceived defensive procedures administered by the 64 gastroenterologists participating in the present survey.

Procedure	DM procedures per month			
	Prescribed		Perceived	
	#	(% of total)	#	(% of total)
Colonoscopies	73.7	(7.9)	1262.0	(21.7)
EGDs	270.9	(27.5)	1273.2	(30.2)
AbdUSs	125.1	(9.2)	148.2	(25.4)
Consultations	76.4	(8.4)	2214.3	(33.2)
Abdominal CT or MR	21.4	(4.9)		NA
Total procedures	567.5	(12.3)	4897.7	(31.7)

AbdUSs, abdominal ultrasounds; CT, computed tomography; DM, defensive medicine; EGDs, esophagogastroduodenoscopies; MR, magnetic resonance; NA, not applicable.

to DM criteria, and four (6.2%) that they never made any DM-based test or examination.

Almost all of the respondents admitted that DM had a major effect on their clinical practice. The mean values of the number of DM procedures per month usually ordered by each respondent were 1.1 ± 2.6 colonoscopies, 4.2 ± 7.0 EGDs, 1.9 ± 2.5 AbdUSs, 0.3 ± 0.5 abdominal CT or MR scans, and 1.2 ± 3.2 consultations. The mean values of the number of procedures performed by each respondent and perceived as "defensive" were 19.7 ± 20.0 colonoscopies, 9.9 ± 20.3 EGDs, 8.2 ± 9.4 AbdUSs, and 7.6 ± 72.1 consultations. Table 2 shows the total number of procedures requested on the basis of DM and the total number carried out and perceived as defensive. The number of procedures perceived as being defensive was 10 times higher than the number of procedures directly requested as DM: 4897 vs. 567. Thirty-four respondents (54%) reported practising DM in order to minimise the risk of legal action by patients, and 19 (30%) in order to decrease the risk of legal action by patients and hospital; the rest said they did so because they found DM-oriented practices reassuring. Forty-six respondents (72%) reported that they had been asked for DM-oriented procedures by general practitioners; the remaining 28% had performed 'defensive' procedures because they had been requested by specialists or by both specialists and general practitioners.

There was no evidence that any of the factors possibly predicting a defensive approach, such as age, gender, the number of years since specialisation, and number of procedures performed (which reflects the level of expertise) correlated with an increase in the number of defensive tests requested. Interestingly, the type of working contract (a permanent contract usually includes professional indemnity insurance in Italy) and organisational context (i.e. public vs. private hospitals) also had no effect on the number of defensive procedures. Despite this, 32 respondents (50%) declared that their defensive attitude had changed over the last few years because of anxieties concerning possible litigation.

The mean VAS scores in response to questions (a), (b) and (c) were respectively 3.8 ± 2.1, 3.8 ± 2.1, and 3.2 ± 2.5. Although the values relating to (a) suggest that the anxiety induced by claims was relatively low, 26 of the respondents (41%) indicated a value of ≥ 6, thus dividing the cohort into two distinct groups. As can be seen in Fig. 1, the VAS scores relating to question (a) directly correlated with the number of requested defensive procedures. Finally, age, gender, and the number of years in clinical practice (i.e. level of expertise) did not have any statistically significant effect on the visual analogue scores.

3.3. Economic burden of DM-oriented gastroenterological practices

The overall monthly costs of the procedures ordered by the respondents were € 65,548 for colonoscopies, € 63,877 for EGDs, € 97,131 for AbdUSs, € 99,345 for abdominal CT or MR scans, and € 20,497 for consultations, for a total of € 346,398. The mean monthly costs per gastroenterologist were € 1024 ± 981 for colonoscopies, € 998 ± 905 for EGDs, € 1517 ± 1243 for AbdUSs, € 1552 ± 1354 for abdominal CT or MR scans, and € 320 ± 603 for consultations. The mean monthly cost of DM per specialist was € 600 ± 695 per month, for a total of € 38,400 (Table 3), and the mean monthly costs of the individual defensive procedures ordered per gastroenterologist were € 81 ± 185 for colonoscopies, € 274 ± 454 for EGDs, € 140 ± 178 for AbdUSs, € 77 ± 121 for abdominal CT or MR scans, and € 26 ± 73 for consultations. This means that DM accounted for 11% of the monthly costs of the procedures ordered by the respondents. As shown in Table 3, on the basis of these findings, it can be estimated that the total cost of defensive procedures ordered by the 170 gastroenterologists working in Lombardy is about € 1,220,000.

The costs of the procedures perceived by practitioners as defensive (Table 3) is even higher: combining the costs of all defensive practices (ordered DM procedures plus those perceived as DM), the total annual cost of the DM-driven procedures generated by the 170 gastroenterologists working in Lombardy is € 8,637,835.

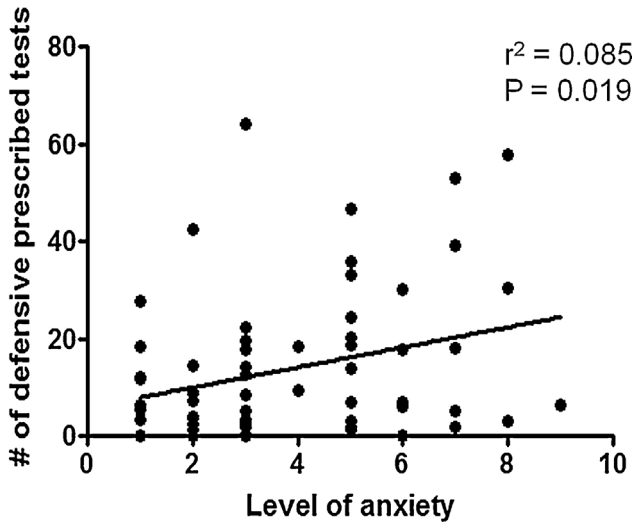

Fig. 1. Relationship between the level of anxiety generated by the risk of litigation and the number of DM-oriented procedures prescribed by the 64 gastroenterologists participating in the survey.

4. Discussion

This study was a first attempt to analyse the impact of DM on gastroenterologists in Lombardy, Italy. The overall findings show that DM is deeply rooted and accounts for 11% of the cost of all ordered procedures. The recent rapid increase in this behaviour is probably related to the anxiety caused by the increasing number of lawsuits against physicians: according to the data available from the regional healthcare health system, there are currently about 11,000 ongoing claims in Lombardy, and the sums requested in Italy as a whole amount to € 2.5 billion.

Since 1994, the number of medical lawsuits has increased by 148%, and insurance premiums for specialists have increased by 70% [15], and it was this situation that created the backdrop for the recent default of insurance companies involved in medical defence in Australia (HIH Insurance) and Italy (Faro) [7,16]. Another possible factor underpinning this tendency may be the transmission of wrong messages by the mass media and continuous advertisement campaigns inviting patients to make malpractice claims even after an interval of up to 10 years.

Table 3
Costs (€) of defensive procedures (prescribed and perceived) administered by the 64 enrolled gastroenterologists (left and central column) and, prospectively, by the 170 Lombard gastroenterologists (right column).

Procedure	Costs of the procedures		
	Prescribed as defensive by 64 GEs/month	Perceived as defensive by 64 GEs/month	Prescribed as defensive by 170 GEs/year
Colonoscopy	5233	89,526	166,801
EGD	17,567	82,570	559,948
AbdUS	8977	10,642	286,141
Consultations	1718	49,821	54,761
Abdominal CT or MR	4937	NA	157,366
Overall	38,432	232,559	1,225,017

AbdUS, abdominal ultrasound; CT, computed tomography; EGD, esophagogastroduodenoscopy; GE, gastroenterologists; MR, magnetic resonance; NA, not applicable.

The study considered positive DM and analysed various factors that could theoretically influence defensive behaviour by specialists in everyday clinical practice. The participating physicians were asked to give their age and type of employment contract on the grounds that younger specialists without a permanent contract (occasional contracts in Italy do not include professional medial insurance paid by the hospital) may tend to request a larger number of procedures in order to avoid claims of negligence. However, this hypothesis was contradicted by the data, all of which were consistent with the absence of a defensive "phenotype" among specialists. This contrasts with the behaviour of gastroenterologists in Japan and physicians in the USA, where physicians who have been practising for more than 20 years tend to adopt DM less frequently than younger physicians [4,17,18]. At first glance, this finding may be wrongly interpreted as positive; however, 93% of our respondents declared that they routinely practice DM, which effectively means that even experienced physicians with a long career behind them act defensively, including those who are "organisationally protected" and insured by their employer. The last point is in line with the mean VAS score in answer to question (b), which indicates that the respondents feel they are abandoned by their institutions. Interestingly, the VAS scores also showed that, although DM is widely used, the anxiety generated by a possible claim was not homogeneously distributed: although the mean score was 3.8, 40% of the respondents indicated a score of >6. These data divide the cohort into physicians who are or are not worried about litigation. However, the answer to question (a), which directly concerned anxiety due to a lawsuit, was the only factor related to the number of ordered DM procedures.

Other findings from the present study are quite striking. First of all, almost all of the respondents stated that they included DM and the international guidelines in their decision making in everyday clinical practice, thus combining the need for a differential diagnosis with the need to limit the risk of a negligence claim. Secondly, the respondents seemed to be quite discouraged by their hospital administrators, who usually perceived as a factor of possible litigation stress, because most of them said they ordered DM procedures in order to reduce the risk of claims from their patients and their hospitals. Thirdly, although the analysis showed that the number of requested procedures is not influenced by the type of employment contract, the VAS scores in answer to question (b) seem to indicate that this factor affects the global level of anxiety.

It is very difficult to compare the DM data generated in different countries, but there does seem to be a global tendency towards the greater use of DM among specialists, which leads to a substantial loss of money for national healthcare systems. This stems from differences in tort systems and the trade-off between actual vs. possible liability costs and health benefits in care provision: on the one hand, a lack of information and the creation of barriers (e.g. insurance) between patients and doctors may prevent claims of medical negligence; on the other, the absence of tort system reforms controlling the peculiarities of medical torts could lead to an explosion in the cost of precautionary measures, especially in countries such as Italy where the costs of examinations are not directly paid by the patients themselves (something that explains the patients' lack of awareness of the real cost of different examinations). Although limited and controversial [18–20], tort reform could reduce this tendency by adopting different approaches studied, such as a cap on damages, the use of standards of reasonable care (the Bolam test, according to which an act can be considered correct when it is in line with a responsible body of medical opinion), restrictions on contingent and conditional fees (to avoid "weak" lawsuits), and the creation of alternative 'private' mechanisms that do not involve ordinary courts of justice. The OMCEO in Milan has claimed that tort reform is essential in Italy because of the discrepancies between different courts and the fact that legislators have not adopted any standard of care guidelines [11]. The economic burden of DM on the public healthcare system revealed by this study could provide a substantial stimulus for a prompt review of this situation in a time of economic crisis.

Although our data provide some much-needed information concerning the impact of DM on gastroenterological practice, they have some limitations. They were obtained from a restricted number of physicians belonging to a single specialty, and therefore do not shed any light on the trends in other medical disciplines. Moreover, it is difficult to describe the feelings of specialists who perceive a performed procedure as defensive because of the difficulty in discriminating those consciously carried out for the purposes of DM and those carried out in order to reassure patients, because they were requested by other specialists, or which were incorrectly ordered because of ignorance about the guidelines.

Although we are aware of these limitations, we believe that our findings show that the use of DM in Italy is in line with that in other countries despite of different medical tort systems regulating litigation. They clearly show that DM is now a well established way of thinking in the decision making process of gastroenterologists, and that it represents a significant cost that could prove to be a very heavy burden in the currently critical economic situation.

Competing interests

None.

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