International or national publication of case reports

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ABSTRACT

INTRODUCTION: Case reports are often regarded as second-class research, but are an important part of medical science as they often present first evidence of new discoveries. We here describe the type of case reports published in a Danish general medical journal.

MATERIAL AND METHODS: We included all case reports published in Ugeskrift for Læger in 2009. For each report, two authors extracted information on study characteristics and classified the relevance and the role of the report.

RESULTS: We included 139 case reports written in Danish. Thirty-nine (28%) were of general relevance and 100 (72%) of speciality relevance. The median number of authors was three (range: 1-7). The first author was a non-specialist physician in 119 (86%) of the reports and the last author a specialist in 103 (78%). A total of 124 (89%) reports had an educational role, six (4%) dealt with new diseases, two (1%) with new side effects, three (2%) with new mechanisms and four (3%) were curiosities. A total of 59 (42%) reports were surgical, 64 (46%) non-surgical and 16 (12%) paraclinical.

CONCLUSION: We found that most case reports published in Ugeskrift for Læger were of speciality relevance and had an educational perspective. The journal may consider focusing on cases of more general educational relevance and should also consider whether the current form and language suit the aim and role of the various types of case reports.

Case reports are often regarded as second-class research [1] and rank lowest in the evidence hierarchy of research designs [2]. Nevertheless, they are an important part of medical science [3, 4]. While they cannot be used to infer causality, case reports are important in uncovering and describing new diseases, in reporting the detection of adverse and beneficial drug effects and in the generation of scientific hypotheses. For example, case reports led to the discovery of HIV [5] and the linkage between thalidomide and birth defects [6]. They have also been used as an educational tool to highlight how to manage rare, but potentially lethal conditions [7], and some have been of a more entertaining and exotic nature [8].

There has been a gradual decline in the number of published case reports in leading medical journals; presumably because of their relatively low number of citations, which would tend to lower journal impact factor [9]. Instead, new journals have evolved which solely publish case reports [10, 11]. In contrast to this, Ugeskrift for Læger, the journal of the Danish Medical Association, has an editorial focus on the publication of case reports [12] (**Figure 1**).

We therefore conducted a study aiming at describing the characteristics of case reports published in Ugeskrift for Læger.

MATERIAL AND METHODS

Sample

One author (AL) identified all case reports published in Ugeskrift for Læger in 2009 using the online version of the journal.

Data extraction and classification

For each case report, two authors (AL, AWJ) extracted study characteristics into a standardised data sheet and classified the relevance and the role of paper and whether the condition or association described had previously been described in other studies. Disagreements were resolved by discussion and there was no need for the involvement of an arbiter.

We extracted title, publication date, number of authors, type of first and last author (specialist physician, non-specialist physician, medical student or not a physician), number of departments involved and clinical field. As clinical field, we used the speciality of the department of the first author.

We categorized relevance as:

FIGURE 1

The editorial, week 40/2008.

VIDENSKAB OG PRAKSIS | LEDER

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ORIGINAL ARTICLE

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1. General relevance
If the information presented in the case report was of relevance to the average physician (i.e. the condition or problem could be encountered by a physician working in general practice or at an emergency ward).

2. Speciality relevance
If the information presented in the case report was of relevance only to physicians from one or a few medical specialities.

We categorized the role as:

1. Recognition and description of a new disease
If the case report described a new disease or syndrome (i.e. related to diagnosis).

2. Detection of a new side effect of an intervention
If the case report described a new type of side effect, either adverse or beneficial, that was not currently attributed to the intervention.

3. Study of a new disease mechanism
If the case report described an association that was not well-established (i.e. related to aetiology).

4. Curiosity
If the aim of the case report was to enliven the medical literature with a description of a curious or humorous case.

5. Educational perspective
If the aim of the case report was to update or remind readers of well-known clinical knowledge that could not be classified as ''new''.

For categories one and three, we stated that the condition described was ''new'' if it was not described in the free online textbook Emedicine which covers all clinical fields, and if the case report did not reference studies of that particular condition or mechanism, except for other case reports. For drugs, we defined ''new side effects'' as effects not described in the latest updated Summary of Product Characteristics from the Danish Medicines Agency and also took into account whether the case report referenced any studies on that particular side effect, except for other case reports. All case reports that were not ''new'', were classified according to where they had previously been described:

1. Described in references
2. Described in textbook

Our criteria for the role of the case report were based on the classification by Vandenbroucke [3], but adding the category ''curiosity'' as described by Grimes et al [4]. Additionally, we broadened the category ''Detection of side effects of drugs'' to include all ''interventions'' (e.g. also medical devices or surgical procedures).

Our methods for data extraction and classification were developed and adapted on the basis of a pilot test performed by all authors, which tested the methods on the first ten case reports published in Ugeskrift for Læger in 2006.

Data analysis
We analysed our data descriptively using SPSS 17.0.0.

Sample size
As our study was descriptive without hypothesis testing, we regarded around 100 case reports to be sufficient. Based on data from our pilot, eleven case reports were published in the first five issues of Ugeskrift for Læger. As around 43 issues are published annually, and assuming the same number of case reports published in every issue, we estimated an inclusion of 95 case reports from 2009.

RESULTS
We identified 140 case reports published in 2009 and

TABLE 1

Characteristics of case reports published in Ugeskrift for Læger in 2009.

	All reports (n = 139)	General relevance (n = 39)	Specialty relevance (n = 100)
Authors, n, median (range)	3 (1-7)	3 (1-7)	3 (1-6)
Type of first author, n (%)			
Specialist physician	17 (12)	7 (18)	10 (10)
Non-specialist	119 (86)	31 (79)	88 (88)
Medical student	3 (2)	1 (3)	2 (2)
Not physician	–	–	–
Type of last author,[a] n (%)			
Specialist physician	103 (78)	30 (81)	73 (77)
Non-specialist	25 (19)	5 (14)	20 (21)
Medical student	–	–	–
Not physician	4 (3)	2 (5)	2 (2)
Departments, n, median (range)	1 (1-5)	1 (1-5)	1 (1-4)
Role of paper, n (%)			
New disease	6 (4)	1 (3)	5 (5)
New side effect	2 (1)	1 (3)	1 (1)
New mechanism	3 (2)	1 (3)	2 (2)
Curiosity	4 (3)	–	4 (4)
Educational	124 (89)	36 (92)	88 (88)
Previously described, n (%)			
In references	123 (88)	33 (85)	90 (90)
In textbook	4 (3)	3 (8)	1 (1)
Not previously described	12 (9)	3 (8)	9 (9)

a) Seven papers had only one author.
Percentages do not always sum to 100 due to rounding.

excluded one report from the Christmas issue, as the type of research in that issue is not representative of the general contents of the journal.

Thirty-nine (28%) of the 139 case reports were of general relevance and 100 (72%) of speciality relevance (**Table 1**).

The median number of authors was three (range: 1-7). The first author was a non-specialist physician in 119 (86%) of the reports and the last author a specialist in 103 (78%). The median number of departments involved was one (range: 1-5).

A total of 124 (89%) case reports had an educational purpose, six (4%) dealt with new diseases, two (1%) with new side effects, three (2%) with new mechanisms and four (3%) were curiosities.

A total of 123 (88%) case reports had a content that had previously been described in one or more of the referenced studies, and four (3%) were not described in the references, but in Emedicine. Thus, 12 (9%) case reports dealt with content not previously described.

Among the case reports of general relevance, seven (18%) had a specialist physician as first author compared with ten (10%) which were of speciality relevance. All four curiosity case reports were of speciality relevance.

In all 59 (42%) case reports were surgical, 64 (46%) non-surgical and 16 (12%) paraclinical. Among these, 16 (12%) were related to gastric surgery, 13 (9%) anaesthesia/intensive care, 12 (9%) orthopaedic surgery, 12 (9%) paediatrics, eleven (8%) gynaecology/obstetrics and 75 (54%) other specialities (**Table 2**). One out of 16 (6%) case reports on gastric surgery, nine out of 13 (69%) on anaesthesia/intensive care and five out of eight (63%) on internal medicine were of general relevance.

TABLE 2

Clinical fields of case reports published in Ugeskrift for Læger in 2009. The values are number of case reports (%).

Clinical fields	All reports (n = 139)	General relevance (n = 39)	Specialty relevance (n = 100)
Surgical			
Gastric surgery	16 (12)	1 (3)	15 (15)
Orthopaedic surgery	12 (9)	3 (8)	9 (9)
Gynaecology/obstetrics	11 (8)	4 (10)	7 (7)
Otolaryngology	7 (5)	1 (3)	6 (6)
Plastic surgery	4 (3)	2 (5)	2 (2)
Urology	4 (3)	–	4 (4)
Neurosurgery	3 (2)	–	3 (3)
Vascular surgery	2 (1)	1 (3)	1 (1)
Total	**59 (42)**	**12 (31)**	**47 (47)**
Non-surgical			
Anaesthesia/intensive care	13 (9)	9 (23)	4 (4)
Paediatrics	12 (9)	3 (8)	9 (9)
Internal medicine (general)	8 (6)	5 (13)	3 (3)
Cardiology	6 (4)	1 (3)	5 (5)
Gastroenterology	6 (4)	–	6 (6)
Dermatology	4 (3)	–	4 (4)
Infectious diseases	4 (3)	1 (3)	3 (3)
Neurology	4 (3)	1 (3)	3 (3)
Endocrinology	3 (2)	1 (3)	2 (2)
Haematology	2 (1)	–	2 (2)
Psychiatry	2 (1)	1 (3)	1 (1)
Total	**64 (46)**	**22 (56)**	**42 (42)**
Paraclinical			
Clinical microbiology	6 (4)	2 (5)	4 (4)
Radiology	4 (3)	–	4 (4)
Clinical pharmacology	2 (1)	2 (5)	–
Pathology	2 (1)	–	2 (2)
Forensic medicine	1 (1)	1 (3)	–
Neurophysiology	1 (1)	–	1 (1)
Total	**16 (12)**	**5 (13)**	**11 (11)**

Percentages do not always sum to 100 due to rounding.

DISCUSSION

We found that case reports published in Ugeskrift for Læger generally had an educational perspective, were of speciality relevance, had a non-specialist physician as their first author and a specialist physician as their last author.

This is, to our knowledge, the first study to systematically describe the characteristics of case reports in a medical journal. We used pilot tested criteria and two authors for data extraction and classification to minimise bias. Nevertheless, the study has potential weaknesses. First, the criteria used are of a qualitative nature and there was some disagreement that had to be resolved through discussion, in particular in relation to general or speciality relevance. Second, the study is based on case reports published in Danish in a single journal, and the results can therefore not be generalised to other journals.

We expected that many case reports in Ugeskrift for Læger would have an educational perspective, as authors discovering new associations will probably aim at publication in a high-impact international journal. For example, case reports in The Lancet are of a more novel nature, and many lead to initiation of clinical trials [13]. However, we were surprised to discover that nine tenth of case reports were educational.

The high focus on educational reports merits discussion. First, it can be questioned whether the typical case report structure provides the best format from a didactic point of view. The format of case reports typically presents both the problem and the solution in the abstract and, consequently, is not suited for training reader skills in differential diagnosis and choice of management. Alternative forms that may be more suited are the BMJ's quiz-like Endgames [14] and case reports commented by experts, such as the New England Journal of Medicine's clinical-problem solving [15]. Also, some

topics covered by case reports might be better presented in other types of articles, such as reviews. Second, the concomitant, high number of cases with speciality relevance is problematic when the audience is all Danish physicians. While the line between what is of general or speciality relevance is not clear-cut, the relevance to only a few medical specialities seems to contradict the educational role of case reports in a general medical journal. Haynes et al estimated that a physician needs to read 17 papers per day to keep up to date with his field [16]. As this is not feasible, physicians have to rely on selected papers addressing questions relevant to their daily practice. For that reason, reading case reports on conditions they will likely never encounter in their career seems a poor investment of resources.

We found that anaesthesia/intensive care and internal medicine had a higher proportion of case reports of general relevance. This could be a spurious finding, but could also be related to the broader nature of these specialities. Interestingly, there were no case reports from general practice and few from psychiatry, although a large proportion of Danish physicians belong to these specialities.

Case reports in Ugeskrift for Læger are written in Danish with a short English summary, contrary to original research articles, which are fully in English. The argument for publishing original research in English is that it is unethical not to make results available to non-Danish speaking readers [17]. It may be reasonable to publish educational case reports in Danish, as information is easier to comprehend when written in one's mother tongue [18]. However, case reports addressing new diseases, associations and side effects should be published in English. This could be done by requiring authors to submit such case reports to the English sister journal, the Danish Medical Bulletin, also owned by the Danish Medical Association.

In most cases, the first author of the case reports was a non-specialist physician. This seems logical, as it is probably the young physicians who first encounter the patients described in these reports. Furthermore, as scientific publications are often necessary to obtain a specialist-training position, case reports are often the first publication of a young physician in training [12].

Recently, it was questioned whether the number of authors of the case reports in Ugeskrift for Læger is reasonable [19]. We found a median of three authors and a range of one to seven authors. Notably, the median number of departments was one, indicating that for many reports, the authors were from the same department. The International Committee of Medical Journal Editors requires that authors make ''substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data'' [20]. As there is no conception, design, or analysis and interpretation of data in a case report, all authors need to make substantial contribution to acquisition of data – a task that apparently seems to be carried out in fellowship between Danish physicians.

In conclusion, we found that most case reports published in Ugeskrift for Læger were of speciality relevance and had an educational perspective. The journal may consider an editorial focus on cases of a more general educational relevance and also whether the current form and language suits the aim and role of the different types of case reports.

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