STATISTICAL ANALYSIS OF AMYLOID ACTIVITIES SINCE 1950 - BASIS FOR AN AUTONOMOUS JOURNAL

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SUMMARY

The numbers and types of amyloid publications listed in International Indices were examined from 1950 to 1986. Until 1960 most of the publications were of a case report nature. Following the meeting in Antwerp on paramyloidoses, an increase rate of publications on amyloidosis began and has continued progressively. The rate of increase surged fairly rapidly until about 1968, a plateau until 1978 followed, and then a very much more rapidly increasing rate since 1979 up to the present time. Some of these changes appeared to be readily explicable, others are puzzling. A survey of selected journals for non-amyloid publications appearing in 1984 and 1985 was also carried out, and a comparision made between these and amyloid publications. The indications are that the existence of an autonomous journal for amyloidosis is overdue.

INTRODUCTION

Although many branches of medicine have for some time run their own specialist journals, there does not presently exist a journal dedicated to amyloidosis. There can be little doubt of the convenience of having all or almost all amyloid publications within one cover. Also at present a significant although small proportion of publications dealing with amyloidosis do not get to be listed in the International Indices and thus may easily be missed. This study was therefore undertaken to find out whether or not the present publications status of amyloidosis would be sufficient to support a specialist journal.

MATERIALS AND METHODS

(a) Non-amyloid Publications

The original issues of the journals were used, and the journals chosen along with the number of the papers and pages is shown in Table 1. A process of selection of publications was rigorously applied as follows - publications counted as relevant consisted of original papers (regular full length, rapid communications, brief reports, case reports, and scientific letters), supplements, reviews, leading articles, clinicopathological conferences, and editorials. Papers and pages excluded because of duplication

Table 1.

NON-AMYLOID PUBLICATIONS
JOURNALS ASSESSED 1984 or 1985

	Papers n	Pages n	Pages/Paper $\bar{x}$
1. American J. of Clinical Pathol.	198	1508	7.6
2. American J. of Medicine	437	2318	5.3
3. American J. of Pathol.	222	2013	9.1
4. Annals of Neurology	249	1535	6.2
5. Annals of the Rheum. Dis.	193	812	4.2
6. Arthritis and Rheumatism	253	1461	5.8
7. British Journal of Rheumatol.	227	609	2.7
8. Clinical Chemistry	718	2214	3.1
9. Journal of Clin. Pathol.	261	1430	5.5
10. Journal of Pathology	94	608	6.5
11. Journal of Rheumatol.	210	957	4.6
12. Laboratory Investigation	163	1398	8.6
13. Amyloidosis Publications	353	1375	3.9
$\bar{x}$	275	1403	5.6
mode	220	1450	5.75
median	220	1400	5.5

comprised abstracts, proceedings of scientific meetings, and conference reports; excluded because of irrelevance were obituaries, advertisements, other announcements and notices, and minutes and administrative records of societies; also excluded were book reviews, and papers concerned with continuing medical education, since such material was not original.

(b) Amyloidosis Publications

Data was culled from the Current List of Medical Literature(1) for the years 1950 to 1959, and from Cumulated Index Medicus(2) from 1960 to 1986. Amyloidosis publications were enumerated for each classification and in toto, and cross checks for repetitious entries were carried out for the random selection of years 1963, 1971, 1972, 1979 and 1984. These results were compared with a personally developed detection, retrieval, and classification system.

RESULTS

(a) Sources of Error

A small number of publications were found to not have been listed by International Indices. The reasons for this were either that the particular journals were simply not listed by the indices at that particular point in time, or else the papers did not include the key words Amyloid or Amyloidosis in the title although in fact they did deal with the subject. Such papers represented less than 2% of the total for any one year.

Repetitious listings as found by the random annual check varied from 6% to 12%, per annum, with a mean of 8%. While statistically irritating, these repetitious listings were valid in that their titles or substance clearly indicated their inclusion in the more than one subclassification in the index.

Finally, over the 5 year total period covered by the random checks some seven minor clerical errors were noted in the indices, such as mis-spelling

of words, or non-inclusion even though the word amyloid or amyloidosis appeared in the title. This rate approximates to well under 1% per annum.

(b) Incidence Patterns by Class

The pattern of incidence of publications under the subclassifications of the subject showed some remarkable, but mostly explicable variations. For example, under the subclass "General Listing" a very rapid and massive drop occurred (from 182 per annum to 35 per annum) within a couple of years following the meetings at Milan(3) and Halle(4). Presumably this reflected the listing agents awaking to the fact that amyloidosis was a very much more complicated subject than had previously appreciated. Since that time the number of general listings has slowly declined to a low of 4 in 1984.

Listings on "Immunology" were virtually non-existent until 1965, when a rapid leap occurred in the space of 2 years; since that time the rate of appearances remained fairly steady up to the present. It seems probable that this pattern of incidence was associated more with the general development of the subject of Immunology than anything particularly related to amyloidosis per se.

A similar pattern is shown in publications for "Diagnosis" - the rate having remained at about 20 to 25 papers per annum since 1967. Notwithstanding, figures for certain diagnostic procedures have increased very rapidly recently - for example "Radionucleotide Imaging", the first paper appearing in 1977 or 1978, the rise having been proportionately very rapid since then. This must relate not only to the fact that this is a useful technique for the diagnosis and localisation of amyloidosis but also, of course, to its lack of availability before 1977.

Publications for "Pathology" remained fairly stable up until about 1980, since when there has been a fairly steady increase to double by the end of 1986. This increase appears to relate to definition of new subclassifications of amyloidosis, and to what might be described as filling in the general background of the spectrum of the disease.

Publications for "Therapy" remained at a very low level indeed until the early 70's when, following announcements relating to the success of colchicine prophylaxis in Familial Mediterranean Fever(5) and the attempts with alkylating agents in primary/myelomatous amyloidosis(6), there has been a slow gradual rise which has maintained up to the present.

Papers relating to "Metabolism" first appeared in 1967 which may relate to stimulation by the description of transfer factor at the meeting on Groningen(7). Publications thereafter remained fairly steady until the time of the meeting at Povoa de Varzim in 1979(8) which coincided with the definition of prealbumin as a fibril protein in Portugese Familial Amyloid Neuropathy(9), and the commencement of our understanding of the functions of the interlueukin system(10).

Papers on "Genetic Familial Amyloidoses" were very few and far between until the middle 1960's. Following the meetings at Milan(3) and Halle(4) the number of papers increased fairly rapidly to an initial small peak at the time of the meeting at Indiana(11). There followed a modest level of activity until the meeting in Povoa de Varzim(8), following which there has been a very highly accelerated rate of publication on genetic and familial amyloidoses, the increase amounting to 500% from then to the present time.

(c) Total Annual Incidences

The total number of papers per annum on amyloidosis published between 1950 and 1986 is shown in Figure 1, which also includes a note of the International Meetings, and some of the highlights of the progress of amyloid research in an attempt at correlation. The major changeover between case history reports to an experimental approach to the subject appears to have followed Alan Cohen's description of the electron microscopic appearance of the amyloid fibril(12) and the meeting in Antwerp(13). The relatively plateau in the late 60's and early 70's probably represents a laborious

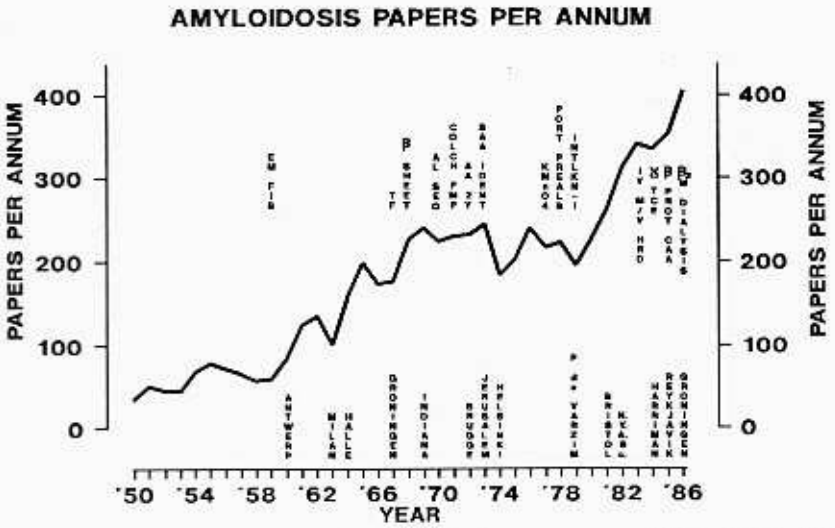

Figure 1. Total number of amyloidosis per annum 1950-1986 with dates of meetings and various relevant milestones.

filling-in of the spectrum of amyloidosis by the somewhat belated application to amyloidosis of experimental methods already in existence. The very marked surge which followed the meeting in Povoa de Varzim(8) perhaps was stimulated by the indications at last of a primary molecular basis for the proteins of amyloid fibrils, a concept which previously had been little more than conjecture.

Figure 2 illustrates the numbers of papers, pages, and mean numbers of pages per paper of amyloid publications relative to the other non-amyloid papers from the selection of journals. It is clear that, quite apart from their intrinsic intellectual value, the sheer number of papers and pages devoted to amyloidosis tend to the positions of dominance compared to these other already very well-known journals.

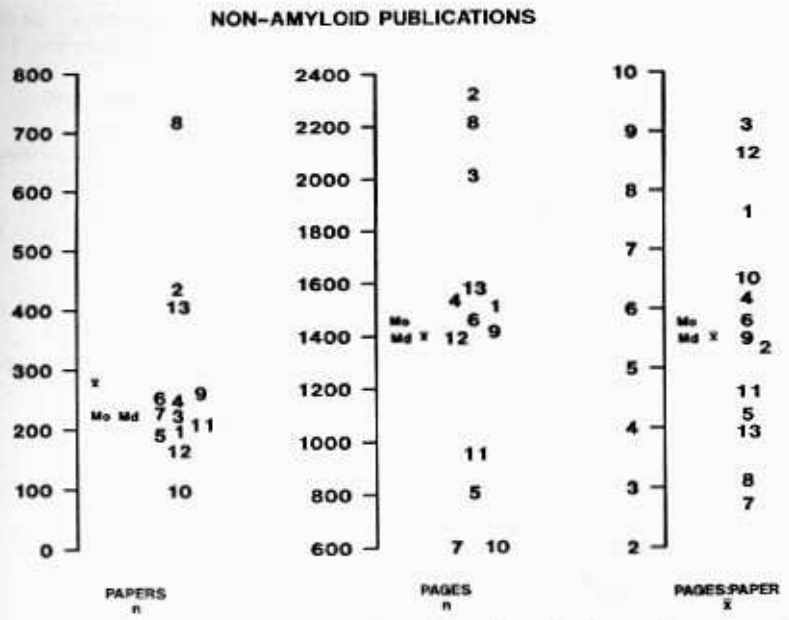

Figure 2. Statistics from the selection of journals assessed. Numbers correspond to the identity of each journal as indicated in Table 1.

CONCLUSION

The pregnancy of the concept of an international journal of amyloidosis has been unduly prolonged. Birth is overdue, and induction of labour would seen timely.

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