

approaches needs to be considered; triple therapy has been reported to be well tolerated at three to five years, while similar data are not available for methotrexate and cyclosporin A.

The success of combination DMARD therapy in recent double blind controlled studies is encouraging.<sup>22 23</sup> As is frequently the case, however, the success of these approaches raises as many questions as it answers. Should all patients with rheumatoid arthritis receive combination DMARD therapy, or should it be reserved for only those with severe disease? Are there ways to predict who will respond best? When in the course of disease should combinations be used? Which combinations are best, or does this vary among patients? After an excellent response occurs, can some or all of these drugs be tapered or discontinued? Where do biological agents fit in, and should they be used in combinations? I do not have the answer to any of these questions. Until these answers are available, we will have to do as we have always done—make the best decisions we can based on the limited data available. As I stated earlier, our goal when treating patients with rheumatoid arthritis should be remission. As we try to achieve this goal, the data available now support the use of certain combinations of DMARD. Whether combinations should be used early in the disease process as suggested by Wilske and Healey<sup>15</sup> or added later is still open to question.

As we better understand the mechanisms of actions of drugs and the disease process itself, we will be able to intervene more intelligently at the right time with the right drugs or combinations of drugs to improve the long term outcome for our patients with rheumatoid arthritis.

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## The misconduct of redundant publication

Misconduct in medical research publication has been increasingly debated in the last two decades.<sup>1-3</sup> There are various levels and forms of misconduct ranging from unequivocal fraud (forgery, piracy, plagiarism), through manipulation of data (“trimming” and “cooking” of results<sup>4</sup>) and undeclared interest, to unintentional errors through bias and self delusion.<sup>5</sup> There are few defined boundaries and many grey zones. Conscious intent to deceive is often difficult to judge. Nevertheless all such misconduct reflects badly on the integrity of the perpetrators. It is counterproductive to the advancement of medical knowledge and is widely condemned.<sup>1-5</sup>

Duplicate and redundant publication are two examples within this spectrum of misconduct. “Duplicate” reports

are rarely identical because of conscious manipulation by the authors, differences in journal style, or varying revisions during peer review and editing. Nevertheless they share the same hypothesis, dataset, information, discussion points, and conclusions. Such publication may not be rare, occurring in up to 13% of published papers in one United Kingdom journal.<sup>6</sup> Few would condone such duplicate publication except in certain circumstances,<sup>7</sup> most notably publication in two languages. In these situations the fact that the work has already been published should be clearly stated and referenced. More common than duplicate publication, however, is the reporting of overlapping and related facets of the same work under different titles, often with reordered or altered authorship, without disclosure.

Such publication is best defined as “redundant” in that it is repetitive and presents little or no new data or information.<sup>8</sup> Apart from the issue of ethical conduct there are several reasons to deprecate redundant publication<sup>8-11</sup>:

- It may infringe international copyright law
- It unnecessarily overburdens the finite resource of expert peer reviewers
- The already overloaded medical literature is made more extensive by unnecessary, repetitive information
- Dividing rather than combining closely related data from a single group impedes scientific communication
- Multiple reports may result in unfounded overemphasis of the importance of the findings
- It may interfere with subsequent meta-analysis by apparent boosting of patient numbers with specified outcomes
- It distorts those academic career and research funding systems that judge researchers by the numbers of their publications.

It may of course be legitimate for one study, for example a large population survey, to generate more than one publication if each addresses an important, distinct question, even though the same dataset is being examined. However, the division between this and “salami slicing” (“meat extender”) publication is often indistinct. Some researchers continually test the “minimal publishable unit” to achieve the maximum number of publications.<sup>12</sup> By comparison, most editors strive to provide all the necessary information in as concise a form as possible. Authors rarely accept the charge of redundant publication. They argue the importance of their data and the need for its dissemination to different audiences, or perceive less substantial overlap between their papers than do editors. However, a reasonable yardstick by which to judge redundancy is to ask whether a single paper would be more cohesive and informative than two, without being excessively long.<sup>8</sup> This, of course, requires that the editor and peer reviewers have knowledge of related reports by the same authors, either submitted, in press, or published.

In this issue of the *Annals* we announce an instance of redundant publication (p.). In September 1995 two papers by Morelli *et al* on plasma endothelin-1 (ET-1) in patients with systemic sclerosis appeared simultaneously in the *American Journal of Medicine*<sup>13</sup> and the *Annals of the Rheumatic Diseases*.<sup>14</sup> The first study<sup>13</sup> (submitted in August 1994, accepted in revised form in December 1994) involved single estimations of plasma ET-1 in 20 patients with systemic sclerosis, some of whom had pulmonary hypertension, pulmonary fibrosis, or both. The *Annals* study<sup>14</sup> (submitted in October 1994, accepted in revised form in May 1995) involved single estimations of plasma ET-1 in 48 patients with systemic sclerosis, some of whom had pulmonary hypertension, systemic hypertension, or both. The methodology of ET-1 estimation and the control group (n = 18) were identical in both studies. Two of three principal conclusions from each study were identical, specifically: (1) blood ET-1 concentrations are increased in systemic sclerosis patients; and (2) this increase is not influenced by coexistent pulmonary hypertension. The other conclusions from the two reports were that ET-1 concentrations are not influenced by coexistent lung fibrosis<sup>13</sup> or arterial hypertension.<sup>14</sup> Four individuals were authors on both papers; 13 others appeared as authors on just one.

Despite obvious overlap and considerable repetition there is no cross referencing between these two papers. Furthermore neither editor was informed of the other paper as being submitted or in press, despite numerous opportunities at the submission, revision, acceptance, and

page proof stages. In their submitting letter to the *Annals*, Morelli *et al* categorically state that their study is original, has not been submitted elsewhere, and is “the first one on the influence of pulmonary and systemic arterial hypertension on plasma ET-1 in patients with systemic sclerosis”. Had either editor been fully informed the manuscripts would not have been accepted as two extended reports. Combining the two clearly would have produced a comprehensive report that more fully addressed the question in hand, that is “is plasma ET-1 elevated in systemic sclerosis and if so does it relate to the extent of pulmonary or systemic vasculature abnormality?”. Dr Morelli refutes the charge of redundant publication and feels that both papers are sufficiently different to warrant separate extended reports. During post-publication inquiries it transpired that the signature of Professor Guido Valesini on the copyright form had been affixed by Dr Morelli in his stead without Professor Valesini’s knowledge or consent. Professor Valesini was unaware of the existence of the paper and its attribution to him until after its publication. Professor Valesini therefore has no association with, or responsibility for, the published *Annals* paper.<sup>14</sup>

In suspected cases of duplicate or redundant publication involving the *Annals* the following procedure is initiated:

- The Editor of the other journal is informed
- The two papers are sent for independent expert peer review for comment on the degree of overlap
- The corresponding author is invited to state on behalf of all the authors their perspective with regard to such an accusation and the circumstances in which it arose.

If it is agreed that redundant publication has occurred an announcement with cross reference to the other publication is made. The heads of the units or institutions employing dually involved authors are directly informed—depending on local policy they may initiate their own internal investigation and possible reprimand. In addition, the *Annals* will not consider further submissions from dually involved authors for a five year period.

This “hard line” policy has been carefully considered and agreed upon by the entire current editorial board of the *Annals*. We recognise that authors have rights with respect to their dealings with editors and reviewers<sup>15</sup> and strive to offer efficient and professional processing of submitted papers.<sup>16</sup> We maintain rapid acceptance to publication times,<sup>16</sup> publish studies with negative as well as positive results, respect authors’ right of appeal for rejected papers, and solicit independent opinion when editor and authors fail to agree. However, we are committed to preserving the standards and integrity of work published in the *Annals* and must expect a certain level of conduct from submitting authors. Inexorably tied to the *credit* of authorship is *accountability*. The responsibility of signed (including “gift”) authorship in the situation where conduct is questioned may result in serious consequences. To be a coauthor means to have done enough of the work to be called to account for it.<sup>3,7</sup> Although our “Information for Authors” and copyright form are explicit, certainly with respect to originality and duplicate publication, this recent incident has prompted several alterations to our Information for Authors. One is the following inclusion: “Authors must declare, and submit copies of, any manuscripts in preparation or submitted elsewhere that are closely related to the manuscript to be considered”.

Primary prevention is clearly preferable to policing and reprimand. In addition to local employing institutions, central “watchdog” committees might usefully contribute in terms of setting standards, gathering data, and offering advice.<sup>3</sup> Within the sphere of scientific research and publication the rights and duties of an author are clearly

outlined, at least in principle.<sup>7,17</sup> But authors, including editors and peer reviewers, are people. They show variability in moral values and behaviour, and are subject to the usual pressures of life and employment. It is naive simply to challenge all authors to behave like saints. We should look to ways of modifying the systems and minimising the pressures that result in misconduct. The motivation for producing two or more papers when one will do is not always clear. Nevertheless, career and funding systems that continue to rate researchers more by number than by quality of publications can only encourage redundant publication<sup>5,8,9</sup> and the related malpractice of gift authorship. Several ways of countering the corrupt incentive to “publish or perish” have been proposed. For example:

- Restriction of the number of publications that may be considered for academic promotion or grant proposals<sup>10</sup>
- Greater recognition and emphasis on teaching performance as well as research in academic institutions<sup>18</sup>
- More precise definition and better education concerning criteria for authorship and the responsibilities this entails<sup>19</sup>
- A shift from “authors” to “contributors” (more akin to film credits) where individual contributions to published work are specified<sup>20</sup>
- Better supervision and training of junior researchers.

Of all these, the first would seem the single most important reform.<sup>10</sup> If an individual’s research performance was assessed on their best one to two papers in any year, with a maximum of perhaps 10 in any five year period, each publication would receive more attention, the incentive for redundant publication and gift authorship would lessen,

and the focus could shift from short term expediency to more thoughtful, ambitious long term studies. Although such assessment is being increasingly adopted it is far from universal. We still have a long way to go.

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