Prescrire International Editorial

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Research scientists: endemic fraud

During the first decade of this century, many articles in the international biomedical press exposed the manipulation of clinical trial results by pharmaceutical companies (1). But in 2012, it is the turn of drug company scientists to complain about the manipulation of the results of preclinical studies by scientists working outside the industry (2).

Widespread fraud. A team of scientists from the pharmaceutical company Amgen tried to replicate 53 preclinical experiments in the field of haematology and oncology that had been reported in landmark articles. In many cases, they contacted the authors of the publications, used their reagents, and in some cases even used their laboratory. The team only succeeded in reproducing 6 of the 53 experiments (2). Some of the authors of irreproducible experiments acknowledged having only published results that supported their hypothesis, even though these results were not representative of the entire data set (2).

A team from the drug company Bayer estimated that only one-quarter of the preclinical studies that it had tried to confirm (70% were in the field of oncology) could be reproduced (2).

These data bring to mind a study published in 2005 showing that one-third of research clinicians acknowledged engaging in serious research misconduct such as failing to present results that contradicted their own, or changing the protocol or results in response to pressure from a funding source (3).

Publish or perish. This widespread fraud is the result of the competition that exists between scientists for reputation, promotion and resources (2,3). The "publish or perish" culture puts them under intense pressure to publish their research in high-impact journals.

The Amgen scientists proposed a profound change in the publishing process for preclinical studies: scientists should provide access to all their raw data; the analysis should be carried out independently; and it should be mandatory to publish all results, including those that refute the original hypothesis (2).

In summary, these scientists propose applying the same measures to public-sector and academic research as those which have already been advocated to curb the manipulation of clinical trial results by the pharmaceutical industry (4).

Patients' interests? The scale of the fraud observed in preclinical and clinical studies is unacceptable. It reflects an unscrupulous pursuit of personal or corporate gain, with no regard for patients' interests. The time has come to stop placing blind trust in the results published by scientists and to allow for these results to be verified.

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1- Prescrire Rédaction "Des données cliniques révélées grâce à des procès" *Rev Prescrire* 2010; **30** (323): 708.
2- Begley CG and Ellis LM "Raise standards for preclinical cancer research" *Nature* 2012; **483**: 531-533.
3- Martinson BC et al. "Scientists behaving badly" *Nature* 2005; **435**: 737-738.
4- Prescrire Editorial Staff "Clinical research: access to raw data is necessary" *Prescrire Int* 2012; 21 (134): 4.

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