

Vision science highlights from the world's leading journals of medicine and science



Honesty best policy

A recent article in the journal Nature raises the spectre of commercial bias, poor judgment, and academic dishonesty in journal publications. The Nature study, which involved surveys and focus groups of leading scientists, found that most were concerned about falsification, fabrication, and plagiarism in the scientific literature and that some had committed violations themselves.

The top ten perceived problems were:

- Falsifying or “cooking” research data
- Ignoring major aspects of human–subject requirements
- Not properly disclosing involvement in firms whose products are based on one's own research
- Relationships with students, research subjects, or clients that may be interpreted as questionable
- Using another's ideas without obtaining permission or giving due credit
- Unauthorised use of confidential information in connection with one's own research
- Failing to present data that contradict one's own previous research
- Circumventing certain minor aspects of human–subject requirements
- Overlooking others' use of flawed data or questionable interpretation of data
- Changing the design, methodology, or results of a study in response to pressure from a funding source.

JCRS editor Doug Koch MD tackles the implications of the Nature article in an editorial. He expresses anxiety about the not uncommon experience of knowing the gist of what some colleagues will publish or present based on known industry affiliations. How great is the problem? Is the problem growing? What are the implications for researchers relationships with industry? Dr Koch comments, “I do not have the answers to these questions, but I believe that we have reasons to be concerned.”

BC Martinson et al., Nature “Scientists behaving badly”, 2005;435:737–738.

D Koch, JCRS, “Truth or Consequences”, Vol. 31, issue 9, 1679-1680.

IV ovine hyaluronidase for vitreous haemorrhage

Intravitreal ovine hyaluronidase is safe and effective for the management of vitreous haemorrhage, according to the results of two prospective, randomised, placebo-controlled, double-masked studies. The studies enrolled more than 1300

patients with severe vitreous haemorrhage of at least one month's duration. They received 55 IU or 75 IU ovine hyaluronidase or saline. Statistical significance was reached in the 55 IU dose group by months one and two. Key secondary endpoints confirmed the treatment effect at both doses and all time points. The researchers report no serious safety issues after a single intravitreal injection of ovine hyaluronidase. The incidence of retinal detachment was not statistically different between groups. Acute, self-limiting iritis was the most common adverse event.

B Kuppermann, AJO, “Pooled Efficacy Results From Two Multinational Randomized Controlled Clinical Trials of a Single Intravitreal Injection of Highly Purified Ovine Hyaluronidase (Vitrace®) for the Management of Vitreous Haemorrhage”, Vol. 140, Issue 4, 573-584.

B Kuppermann, AJO, “Safety Results of Two Phase III Trials of an Intravitreal Injection of Highly Purified Ovine Hyaluronidase (Vitrace®) for the Management of Vitreous Haemorrhage”, Vol. 140, Issue 4, 585.e1-585.e15.

New retinoblastoma treatment

A new treatment approach could save both the lives and the vision of paediatric retinoblastoma patients. A study showed that combination therapy with topotecan and carboplatin is superior to the standard triple-drug therapy using vincristine, carboplatin and etoposide. The new combination eliminates the use of etoposide, which is known to increase the risk of the children getting acute myeloblastic leukaemia. The study also indicates that vincristine contributes little to the treatment of retinoblastoma, and therefore can be eliminated from therapy.

MA Dyer et al., Clinical Cancer Research, “Topotecan Combination Chemotherapy in Two New Rodent Models of Retinoblastoma”, 2005 11: 7569-7578.

Steroid-antibiotic combination post-cataract surgery

A fixed combination of dexamethasone 1.0 mg/ml plus netilmicin 3.0 mg/ml is safe and effective in the postoperative management of cataract surgery, report Italian researchers. In a clinical trial, 223 patients were randomly treated with dexamethasone plus netilmicin or dexamethasone plus tobramycin four times a day for seven days following surgery. At day seven, both fixed combinations were equally effective in reducing postoperative inflammation. The safety profile of the dexamethasone/netilmicin combination was excellent, with no evidence of poor local tolerance or adverse reaction.

Russo S, et al., Eye, “Dexamethasone-netilmicin: a new ophthalmic steroid-antibiotic combination. Efficacy and safety after cataract surgery”, Eye, 2005, 4 Nov, online advance publication (www.nature.com/eye).

Mandatory vaccinations

As flu season gets underway, researchers at Johns Hopkins University are calling for mandatory vaccination of all health care workers, saying it is the best way to protect both patients and staff. An editorial from the researchers cites studies indicating that voluntary vaccination programs are insufficient. They note that in America alone 40,000 die from influenza. Research from Johns Hopkins showed that annual flu shots have been 88% effective at reducing the risk of flu infection, and that vaccination reduced by the number of flu-related deaths among hospital patients by 50%. They note that under existing voluntary programs, only 40% of health care workers are vaccinated. Surveys indicate that lack of time and an unfounded fear that flu vaccination can induce disease are the most common reasons for not getting vaccinated.

T Perl et al., Infection Control and Hospital Epidemiology, “The Next Battleground for Patient Safety: Influenza Immunization of Healthcare Workers”, November 2005, Vol. 26, No. 11.

CRP and AMD

Increased C reactive protein (CRP) levels do not appear to correlate with age related macular degeneration (AMD), a US study concludes. CRP is an inflammatory marker that is believed to be associated with cardiovascular disease. Researchers reviewed data from the Cardiovascular Health Study (CHS), a longitudinal study that enrolled older adults from four communities in the United States from 1989 to 1990. They used fundus photographs taken during the study to identify individuals with (390 people) and without AMD (2,365 people). Overall, median CRP levels among those with AMD (1.76 mg/l) were similar to those without AMD (1.77 mg/l). The authors conclude that this study provides no evidence that CRP levels are associated with AMD. These data do not support the theory alleging non-specific systemic inflammation in the aetiology and natural history of AMD.

G McGwin et al., BJO, “The relation between C reactive protein and age related macular degeneration in the Cardiovascular Health Study”, 2005;89(9):1166-70.

CIGTS Complications

An analysis of data from the Collaborative Initial Glaucoma Treatment Study (CIGTS) indicates that while complications occurred with some frequency after trabeculectomy, there were few complications with the potential to cause severe sustained vision loss. A review of 300 patients randomised to surgery in the multicentre, randomised trial showed that intraoperative complications occurred in 12% of 465 trabeculectomies performed. Anterior chamber bleeding during surgery was the most common (8%), followed by conjunctival buttonhole. Early postoperative complications occurred in half of the eyes. Complications included shallow or flat anterior chamber (13%), encapsulated bleb (12%), ptosis (12%), serous choroidal detachment (11%), and anterior chamber bleeding or hyphaema (10%).

Jampel HD et al., American Journal of Ophthalmology, “Perioperative Complications of Trabeculectomy in the Collaborative Initial Glaucoma Treatment Study”, July 2005, Vol. 140, Issue 1, Pages 16-22.

Laser ophthalmoscopy predicts POAG

The results of an ancillary study to the Ocular Hypertension Treatment Study (OHTS) suggest that confocal scanning laser ophthalmoscopy may be a useful in the prediction of glaucoma. The study included 865 eyes of 438 patients who underwent baseline confocal scanning laser ophthalmoscopy (CSLO) optic disc topographic measurements. The follow-up results indicated that baseline topographic optic disc measurements alone or when combined with baseline clinical and demographic factors were significantly associated with the development of POAG. The authors cautioned that longer follow-up would be required to evaluate the true predictive accuracy of CSLO measures.

L Zangwill et al., Archives of Ophthalmology, “Baseline Topographic Optic Disc Measurements Are Associated With the Development of Primary Open-Angle Glaucoma: The Confocal Scanning Laser Ophthalmoscopy Ancillary Study to the Ocular Hypertension Treatment Study” Sep 2005; 123: 1188 - 1197.