

PostScript

BOOK REVIEWS

Hair in toxicology: an important bio-monitor

Edited by Desmond John Tobin. Published by The Royal Society of Chemistry, Cambridge, 2005, \$199, pp 355. ISBN 0-85404-587-2

Hair in Toxicology: an important bio-monitor is a scientific and practical book. Hair testing began slowly about 28 years ago, initiated perhaps by Baumgartner's pioneering article. Sachs suggested an erratic growth thereafter, with a "gold rush" period between 1986 and 1992, typified by relatively uncritical use of hair testing, followed by a "hang over" period between 1992 and 1996 characterised by more critical reflection. It seems that a renewed "gold rush"—at least of published papers if not of conclusive results—began thereafter. Hair allegedly offers one crucial potential advantage when compared with—for example, blood or urine as a medium for divination—the long time window. Whereas blood and urine can only indicate use for a few days, hair offers the possibility of retrospective use examination for at least several months. A number of other advantages of using hair are sometimes cited (difficult to falsify, easy to store, lengthy shelf life, low body invasion, etc.). Hair analysis is used as a tool in the detection of xenobiotics (drug of abuse, pharmaceuticals, environmental contaminants, etc), forensic science, traffic occupational medicine and clinical toxicology. The subject of analytical testing in hair has always had an element of controversy due to perceived problems of environmental exposure, among other areas of concern, and *Hair in Toxicology: an important bio-monitor* takes on these issues in a direct manner.

The book begins with a brief but nice preface by Dr Desmond John Tobin and contains four parts. It starts out by telling us about the biology of hair (the biogenesis and growth of human hair; the anatomy, biosynthesis, physical properties, pigmentation and abnormalities of the hair shaft). Many figures enhance the information given by the text. The second part of the book is an excellent review regarding the application of hair biology in environmental assessments. The application of hair biology in forensic toxicology and human identification is discussed. The authors present several forensic cases where hair analysis has indicated drug-facilitated crimes. Then, the book briefly summarises the toxicology and kinetics of metals in relation to hair, presents the relative advantages and disadvantages of hair compared with other biomarkers of exposure to metals and considers situations where hair analysis may be indicated to monitor or document human exposure to metals. It also discusses the misuses of "commercial" hair tests for panels of metals and minerals whose results are promoted as indicators of health, nutritional status and metal toxicity. Tables help to summarise complex concepts wherever necessary. An appropriately broad range of metal toxicity is covered, from the viewpoints of both symptoms and signs. The last two chapters of part two provide information about the advantages and limitations of hair fibre analysis as a biomarker of human exposure to environmental pollutants

and trace elements; advantages and problems associated with the use of hair as a study tissue; and diseases associated with changes in hair composition. These chapters provide a step-by-step discussion of the above information by reviewing different human studies as well as by providing easy-to-understand figures and tables.

Hair in toxicology: an important bio-monitor tells us not only about how hair can serve as a biomarker for toxicity and exposure but also about how the different hair care products can affect the body. In the third part of the book the chemistry of hair care products and their potential toxicological issues are discussed. Finally, in part four, an interesting chapter on the value of hair in bio-archaeology—for example, hair as an indicator of past diet and population movement or as an indicator of exposure to pollutants, and as a record of drug or micronutrient use. A practical aspect of this book is that testing procedures and the interpretation and clinical use of hair analysis are described for the related subjects in several chapters.

Overall, the general appearance of the book is satisfactory. The clarity of the figures is appropriate. The index is thorough, and I found it relatively easy to use. The accuracy and coverage of the references, by all of the authors, are good. Copious references are included with each chapter. Abbreviations are explained as they appear in the text. Numbering the tables and figures according to the chapter gives a better correlation. This book, with adequate references, gives sufficient information to meet the needs of advanced undergraduates and graduate students. This is also suitable for biologists, toxicologists, pharmacologists, nutritionists and a variety of students who wish to obtain additional knowledge of hair analysis. Many of the authors of this book are well known in the fields of environmental health sciences, toxicology, biomedical sciences, analytical chemistry, occupational health medicine, industrial medicine and archaeological research and represent an almost even split between European and American contributors. It is my opinion that this book complements the previous text, regarding hair analysis, nicely.

With all my experience in this branch of medicine I highly recommend this text to all toxicologists. Sections in this text should also be reviewed by doctors who see patients with chronic toxicity. People who have had chronic exposure to toxic substances may also find chapters in this book helpful.

N Eizadi Mood

Handbook for good clinical research practice (GCP): guidance for implementation

Published by the World Health Organization, Geneva, 2005, pp 125 (softcover) + CD. ISBN 92-4-159392

Ever thought good clinical practice (GCP) dull? Ever felt abbreviated out? Well, I'd like to report that the WHO's *Handbook for good clinical practice (GCP): guidelines for implementation* is an antidote to the mind-boggling stream of acronyms bandied about in research and development departments throughout the world, and that it provides an interesting and

amusing narrative on the current minefield that constitutes Research Governance...

Well, as the title might suggest, it was a bit of a long shot.

Research and development managers, finance departments, data protection officers and ethics committees now form a formidable team apparently dedicated to snuffing out the life of a research idea at conception. They have had to become familiar with the requirements of GCP, mandatory in this country since March 2004. The research community is slowly catching up. Transforming research from its cottage industry status, where anyone can have a go, has been a traumatic experience for many researchers. It remains so in some cases, and "own account" studies on investigational medicinal product are becoming a rarity. GCP, of course, applies to any study involving human subjects, not just to drug or device trials. The business of research governance is now bedded down in many trusts, especially the larger ones, and is operating reasonably smoothly. It is easy to forget, however, especially when attempting to get an investigational medicinal product study off the ground, that GCP regulations are actually intended to improve the quality of research and the safety of patients. In most cases, this is exactly what they have achieved. The handbook acts as a useful reminder of the essential philosophy underpinning the bureaucracy.

It provides a concise and clear description of the 14 principles underlying GCP as well as guidance on their implementation in practice. The roles and responsibilities of the various stakeholders in the research process are also described. There are many sources used, the eight most important of which are on an accompanying CD. It follows the research process through the development of the protocol and standard operating procedures, support systems and trial-related documentation, selection of trial sites, ethics approval, through to data management and reporting. Each step in the process has relevant GCP principles, which need to be borne in mind.

Naturally, the handbook is written for an international audience and will only ever act as useful background to your local GCP training. Nevertheless, it is background that I'd recommend to serious triallists and health services researchers.

Andy Barton

CORRECTIONS

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G Parry, P Van Cleemput, J Peters, *et al.* The health status of Gypsies and Travellers in England (*J Epidemiol Community Health* 2007;61:198–204). The unlocked logo and text stating that this paper is freely available online under the BMJ Journals unlocked scheme was erroneously omitted from this paper. We apologise for this error.

Mutaner C, Chung HJ. Psychosocial epidemiology, social structure, and ideology (*J Epidemiol Community Health* 2005;59:540–1). The surname of the first author of this paper was spelt incorrectly and should be Muntaner. We apologise for this error.