

Book Review

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Brain-eating Amoebae: Biology and Pathogenesis of Naegleria fowleri Paperback – 1 Jun 2016 by Ruqaiyyah Siddiqui, Ibne Karim M. Ali, Jennifer R. Cope, Naveed Ahmed Khan. Caister Academic Press.
Book reviewer: Dr. Johan F. De Jonckheere.

The title of the book '*Brain-eating Amoebae*' might suggest a horror novel were it not for the subtitle '*Biology and Pathogenesis of Naegleria fowleri*'. The subtitle is however somewhat misleading, as the book contains a mixture of results obtained with *N. fowleri* as well as other *Naegleria* spp., mostly *N. gruberi*. It was shown a long time ago that both species are as far apart as amphibians are to mammals: indeed the reference for this is provided in the book (Baverstock *et al.* 1989).

Chapters 1–5 deal mostly with *N. fowleri* because this is the only human pathogen within the genus *Naegleria*. From chapter 6 onwards *N. fowleri* and *N. gruberi* are confused: it is not always clear which species is the authors are dealing with, as sometimes the general term *Naegleria* is used to hide the fact it is not *N. fowleri*. Chapter 7 is entitled '*Cellular Differentiation in N. fowleri*' although most of the results were obtained from *N. gruberi* cultures. Only once, in chapter 10, is it mentioned that the effects obtained on *N. gruberi* remain undetermined on *N. fowleri* – in all other instances one is left in doubt about this. There is an extensive description of the structure of group I introns, but it is not explained what they are; furthermore *N. fowleri* does not contain group I introns.

In many chapters almost every publication gets a separate subheading, while there is no explanation of how these different results relate to each other, and the coverage is patchy. Chapter 11 'Conclusions and future studies' is written in general terms and is too repetitious to have any impact.

Developing a vaccine by looking for vaccine targets is of no value at present for such a rare disease.

The genome of *N. fowleri* gets little attention, although data on the whole genome has been available since 2014. Some discussion of the genome would have been relevant, as it puts several biochemical and virulence factors into perspective.

Siddiqui and Khan are motivated authors, but must have little experience with *N. fowleri* because they are only familiar with the occurrence of this infection in Pakistan. In chapter 1 five pages are devoted to the cases in Pakistan, which has had fewer than 20 cases, whilst only half a page is assigned to risk factors in the rest of the world. As an example, as many cases occurred after swimming in a disinfected swimming pool in the former Czechoslovakia as in the whole of Pakistan. This outbreak was worth mentioning because it occurred in special circumstances in that swimming pool. It is true that in Pakistan a new risk factor was detected, nasal cleansing/irrigation using neti pots, but this fact alone does not warrant publication of a book, especially as the information has been published by the authors several times before.

Despite the comment in the preface that several experts read chapters and sections for accuracy, the book contains irritating scientific and editing errors. For example it is mentioned twice that most cases of the disease in Europe occurred in France: this is not true, only one case was attributed to *N. fowleri* in France, in Guadeloupe, which is a French territory but is not in Europe. On several occasions measurements are given in μm when it should be nm. There are also some errors in the references and the use of these references.

The book would have gained from better proofreading before publication. This first monograph on *N. fowleri* should have merited better treatment – it is a missed opportunity, as it is not, unfortunately, '*an essential...and invaluable reference*' as indicated in the preface.

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