Thirty years of ‘quiet eye’ with etafilcon A contact lenses

Author:
Efron, N; Brennan, NA; Chalmers, RL; Jones, L; Lau, C; Morgan, PB; Nichols, JJ; Szczotka-Flynn, LB; Willcox, MD

Publication details:
Contact Lens and Anterior Eye
v. 43
Chapter No. 3
Medium: Print-Electronic
pp. 285 - 297
1367-0484 (ISSN); 1476-5411 (ISSN)

Publication Date:
2020-06-01

Publisher DOI:
https://doi.org/10.1016/j.clae.2020.03.015

Downloaded from http://hdl.handle.net/1959.4/unsworks_84049 in https://unsworks.unsw.edu.au on 2024-06-18
Correspondence

Authors’ Reply: “Thirty years of ‘quiet eye’ with etafilcon A contact lenses: Additional considerations”

Dear Sir,

We welcome the opportunity to respond to the Letter by Dr Carnnt and Professor Stapleton concerning our review of the role of etafilcon A in modern contact lens practice [1]; however, we feel that a number of points they raise are misguided.

It is not strictly correct to say “first generation silicone hydrogel lens types consistently show higher attachment of bacteria compared to hydrogel lenses”. Decreased or equivalent adhesion of Pseudomonas aeruginosa to first generation silicone hydrogel lenses compared to etafilcon A lenses has been shown in three papers [2–4]. If left to form biofilms, there appears to be no difference [5] in adhesion to first generation silicone hydrogel lenses.

Nor is it always the case that Acanthamoeba adhere in greater numbers to Type IV lenses compared to silicone hydrogel lenses. For example, Beattie et al. [6] and Beattie and Tomlinson [7] found that Acanthamoeba castellanii trophozoites bound in higher numbers to lotrafilcon A or balafilcon A lenses compared to etafilcon A lenses. As mentioned in our original paper [1], this reflects the effect of different methods, conditions and bacterial strains on adhesion. These factors make any link between microbial adhesion to contact lenses and risk of developing microbial keratitis problematic, as noted in our original paper [1], and standardisation of methods and conditions is needed.

While Acanthamoeba keratitis (AK) is indeed a “chronic debilitating corneal infection”, we advise caution in interpreting the results of the paper by Carnt et al. [8] published in 2018. First, the authors incorrectly classified senofilcon A as group VA – the referent used in their multivariable analysis – when it is in fact group VC.

Second, cases in the study of Carnt et al. [8] were recruited from 2011 to 2014, whereas controls used in the analysis were recruited between 2016 and 2017. Use of reusable hydrogel lenses decreased over this period in the UK, as evidenced, for example, by a 50 % reduction in reported prescribing of these lenses between 2011 and 2017 [9,10]. The self-characterization of the study of Carnt et al. [8] as “large” was perhaps intended to impart an aura of authority; however, only 7 cases of AK and 13 controls using Group IV lenses were recruited. Thus, the reduced usage of Group IV lenses over the time period of the study may be sufficient to explain the finding of statistical significance in this small sample.

Third, the statement of Carnt et al. [8] that Type IV lenses were “associated with an increased risk of Acanthamoeba keratitis compared with other reusable soft lenses” has potential to mislead. The comparator was the referent – that is, group VA lenses – not all other reusable soft lenses, as might be inferred from the statement.

Finally, Carnt et al. [8] state that “between 80 % and 90 % of AK cases are potentially avoidable if effective disinfection systems are used, good contact lens hygiene practice followed and exposure to water while using lenses is avoided.” This emphasizes the need, as stated in the Letter of Dr Carnnt and Professor Stapleton, to understand the interaction between solution type and lens material in the development of Acanthamoeba keratitis, before readily associating a material type with increased risk.

We agree with the general sentiments expressed in the final paragraph of the Letter of Dr Carnnt and Professor Stapleton; indeed, their comments reinforce the main conclusion of our review, that notwithstanding tremendous developments in respect of technologically advanced contact lens materials – especially high oxygen permeable silicone hydrogels – traditional hydrogel materials such as etafilcon A still represent a viable option for many contact lens wearers [1].

As Dr Carnnt and Professor Stapleton rightly point out, no single lens type represents the best lens choice for all wearers. Factors such as lifestyle needs, refractive considerations, ocular physiology, comfort and visual status, coupled with an assessment for avoidance of risk of microbial keratitis, all come into play when deciding the best lens for an individual lens wearer – whether this be a hydrogel, silicone hydrogel or rigid lens – and the most appropriate care system if reusable lenses are being prescribed.

Disclosures

Disclosures are the same as per our original paper [1], except that author C.L. has left Johnson & Johnson Vision, Inc. and is now employed by Novartis Pharmaceuticals.

References


Nathan Efron*
Institute of Health and Biomedical Innovation, School of Optometry and Vision Science, Queensland University of Technology, Australia

Noel A. Brennan
Johnson & Johnson Vision, Inc, Jacksonville, FL, USA

Robin L. Chalmers
Clinical Trial Consultant, Atlanta, GA, USA

Lyndon Jones
Centre for Ocular Research & Education (CORE), School of Optometry & Vision Science, University of Waterloo, Waterloo, Ontario, Canada

Charis Lau
Novartis Pharmaceuticals, East Hanover, NJ, USA

Corresponding author at: Institute of Health and Biomedical Innovation, School of Optometry, Queensland University of Technology, Kelvin Grove, Queensland 4059, Australia.
E-mail address: n.efron@qut.edu.au (N. Efron).