Prevalence of subclinical anterior uveitis in adult patients with inflammatory bowel disease

F D Verbraak, M C J M Schreinemachers, A Tiller, S J H van Deventer, M D de Smet

Abstract

Aim—To assess the prevalence of subclinical anterior uveitis in adult patients with inflammatory bowel disease. Methods—In 179 consecutive patients (96 with Crohn's disease, 55 with ulcerative colitis, and 28 with inflammatory bowel disease of undetermined nature) without previous or concurrent ocular complaints, quantitative flare measurements were obtained with the Kowa FC laser flare to detect the presence of subclinical uveitis. Results—The mean flare value was 3.9 (SD 1.1) ph/ms in patients younger than 30 years of age, rising to 5.8 (2.5) ph/ms in those over 60 years of age. No measurement performed in this patient population fell outside the mean observed value plus or minus SD of the normal controls within the same age category. Conclusion—in an adult population of 179 consecutive patients with inflammatory bowel disease the presence of a form of subclinical uveitis, as described by Hofley et al in a group of juvenile patients, is highly unlikely.

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In all patients with anterior uveitis the disease was active at the time of measurement. In all patients with (epi)scleritis no active ocular inflammation was present at the time of flare measurement. Controls were accompanying persons of patients seen in the ophthalmic outpatient clinic without a history of eye or intestinal problems.

### Results

A total of 179 consecutive patients were included, 96 with Crohn’s disease, 55 with ulcerative colitis, and 28 with inflammatory bowel disease of undetermined nature. No significant differences were observed in flare measurements between the right and left eyes of any patient, so the mean photon count of both eyes is presented and used to estimate the mean photon count for each different age category (Table 1).

In patients with Crohn’s disease the mean flare value was 3.9 (SD 1.1) photons/ms in the patients younger than 30 years of age, rising to 5.3 (2.5) photons/ms in the patients over 60 years of age. Patients with ulcerative colitis or with an indeterminate type of inflammatory bowel disease showed the same pattern of results. No measurements fell outside the mean observed value plus or minus SD in the normal controls within the same age category.

The results of flare measurement in 11 patients excluded because of a positive history of previous anterior uveitis (n=2) or an (epi)-scleritis (n=9) are presented separately in Table 2, together with flare measurements of four patients with inflammatory bowel disease with clinically manifest anterior uveitis. The laser flare photometer is capable of detecting very slight increases in aqueous humour opalescence, something which was not possible in previous studies in which a graded method was used to grade clinical assessment was used. Hofley et al used the slit lamp to detect flare in the anterior chamber in his patients. Previous studies established that clinically evident pathological flare in the anterior chamber using the slit lamp corresponds on the laser flare measurements to a minimum of 27.2 (3.0) ph/ms. In the present study not one patient was seen with a flare value of this order of magnitude. Furthermore, the same laser flare photometer correctly detected increased flare values in four patients with inflammatory bowel disease and clinically manifest anterior uveitis in accordance with published measurements.

We compared the patients with Crohn’s disease in this study with those reported by Hofley et al with respect to activity of the bowel disease, colonic location of the disease process, and the use of oral corticosteroid medication at the time of the flare measurement (data not shown). There was no significant difference in either the activity (51% versus 41%, p=0.6) or the colonic involvement of the inflammatory bowel disease (64% versus 60%, p=0.7). However, there was a difference in the use of oral corticosteroid medication (25% versus 46%, p=0.05) which could camouflage an inflammation elsewhere in the body such as anterior uveitis. Nevertheless, it seems highly unlikely that this difference explains the total absence of uveitis in the present study population.

### Discussion

Contrary to the findings of Hofley et al and Daum et al, we were unable to identify a single case of subclinical uveitis among 179 adult patients with inflammatory bowel disease using the laser flare meter. All flare values observed in the patients fell within the age corrected mean (SD) flare value observed in the normal controls. There was no difference between the flare values determined in the normal population in this study and those performed by previous authors in healthy eyes.

We consider it highly unlikely that the method used was unable to detect subclinical uveitis. The laser flare photometer is capable of detecting very slight increases in aqueous humour opalescence, something which was not possible in previous studies in which a graded method was used to grade clinical assessment was used. Hofley et al used the slit lamp to detect flare in the anterior chamber in his patients. Previous studies established that clinically evident pathological flare in the anterior chamber using the slit lamp corresponds on the laser flare measurements to a minimum of 27.2 (3.0) ph/ms. In the present study not one patient was seen with a flare value of this order of magnitude. Furthermore, the same laser flare photometer correctly detected increased flare values in four patients with inflammatory bowel disease and clinically manifest anterior uveitis in accordance with published measurements.

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The most striking difference between the two study populations is the difference in age. Hofley et al. exclusively examined a group of juvenile patients with inflammatory bowel disease while, according to the protocol, all patients in our study were adults. It is possible that, unlike adults, juveniles may sometimes show a mitigated course of inflammatory disease because of a difference in the immune response in these autoimmune driven diseases. Another possible explanation is that juvenile patients are relatively insensitive compared with adults with respect to the discomfort of an ocular inflammation.

In conclusion, in an adult population of 179 consecutive patients (96 with Crohn’s disease, 55 with ulcerative colitis, and 28 with inflammatory bowel disease of undetermined nature) all flare values measured with the laser flare meter were within normal limits. The presence of a form of subclinical uveitis in an adult population with inflammatory bowel disease, as described by Hofley et al. in a group of juvenile patients, is highly unlikely.

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