

Easy read summary of results for the neuropathy study

Background

Nerve damage is a common and costly complication for patients with diabetes, which can result in foot ulcers and even amputation. In the early stages, it is hard to detect as there are no obvious signs and once there are, the damage cannot be reversed. At the moment, existing tests are limited, for example most tests can only detect nerve damage at the advanced stage.

There is a relatively new eye test that allows the capture of detailed images of the nerves in the front of the eye called "Corneal Confocal Microscopy" (abbreviated to CCM). CCM can detect nerve damage at the early stages, but is currently only used in research centres. The aim of this study was to find out whether it was feasible to offer CCM in high street optometry practices to test for nerve damage. In the UK, all patients with diabetes receive an annual diabetic eye test for retinopathy (a condition that can lead to sight loss) through the NHS, therefore, a double appointment could be made for both the CCM and retinopathy tests.

Results

Four experienced optometrists from four different optometry practices across Greater Manchester participated. After completing the training, they offered the CCM eye test to all diabetic patients who booked in for their annual diabetic eye test appointment. In total, 449 patients aged 16 or over took part. Most patients thought the CCM test was acceptable, 90% reported they didn't experience any pain, 87% thought it was comfortable, and 97% would agree to repeat the test again in the future. The average time to complete a test decreased from 16 minutes to 10 minutes during the six months period of the study. After the test, images of the cornea were sent through to an expert, who reported that 96% of images were of good enough quality for a diagnosis to be made.

In total, optometrists completed 92% of tests. However, in 36% of patients they found it difficult to complete the test, and for 4% of patients they found it impossible. Some reasons for this were that patients needed to keep very still and have a fixed gaze for a long time which is difficult for some patients with conditions such as Alzheimer's disease or respiratory problems. Potentially, some of the issues with difficult tests could be overcome with further training and experience. Optometrists also thought that the CCM equipment was not as user-friendly as the other testing equipment and more training is required, therefore if CCM were to become part of their daily practice, they recommended making some alterations to make it quicker and simpler to use.

The cost of introducing the CCM test, was also estimated for two different settings; 1) within optometry practices in England, and 2) in mobile vans, assuming that both the CCM and current annual diabetic eye tests were completed in a double appointment. It would cost £20 more per person per year if the CCM test were carried out in optometry practices, or £15 more per person per year if CCM was carried out in mobile vans.

Future work

Optometrists were satisfied with the training they received, and they valued the opportunity to have expert supervision in their own practice, but suggested the training could be improved in the future by:

- Include more hands-on practical training of using CCM (including complex cases).
- Include more training in identifying images that are of sufficient quality to enable a diagnosis to be made. This would help with the process of selecting the images to send off, which was considered time consuming.

Future research could investigate the accuracy of the CCM test compared to other available tests to detect neuropathy. Research could also explore the role of early neuropathy diagnosis in reducing the risk of complications.

More information

For more information about this work please contact susan.howard@srft.nhs.uk or call 0161 206 8551 referencing the “ENA project”.