

00117 Camera for General Practitioners to Identify Dry Eye

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Aims: Dry eye is a common problem that adversely affects quality of life for many worldwide. General Practitioners (GPs) often refer patients with symptoms of dry eye to tertiary hospitals without any objective evaluation of the severity of patients' condition, causing inappropriate referrals. The purpose of the study was to design and evaluate an instrument which allows GPs to examine the gravity of a patient's dry eye without a slit lamp, thereby determining whether one should be managed in the community or sent to a specialist for further evaluation.

Methodology: A clip-on device that could be attached to any smartphone device (iPhone or Androids) and used along with its camera function was designed. This device allows staining spots in the ocular surface to be visualised and recorded after a topical fluorescein dye was added to the patient's eye. Patients in a dry eye clinic at Singapore National Eye Centre were tested on in a observational trial. Participants were imaged with a prototype in conjunction with iPhone 7 by a user that was not an imaging professional. The results were then compared to views of the same eye under a slit lamp biomicroscope. GPs were also given an opportunity to use the device and their feedback obtained.

Result: After two generations of prototypes, length, size and method of attachment to a phone were optimised so that cornea images could be visualised with sufficient resolution and contrast. Cornea staining spots of moderate size were easily identifiable, especially in the middle and lower corneal zones. Practitioners found the adaptor easy and convenient to use.

Conclusion: The adaptor is able to detect patients that may need specialised care and referral to eye specialists. This allows for right situation of patients in the care continuum and in the long term, more sustainable care.