Performance rate of gonioscopy and pachymetry in glaucoma assessment in a general ophthalmic clinic

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Introduction
Glaucoma was ranked the second most common cause of blindness by the World Health Organisation. Treatment strategies of glaucoma depend on the type of glaucoma, which are stratified by angle status, intraocular pressure(IOP), and presence of secondary causes. Gonioscopy is a clinical examination that directly examines the angle status. Pachymetry measures corneal thickness, which may affect IOP substantially. Gonioscopy and pachymetry are therefore important examinations in diagnosing glaucoma.

Objectives
To audit the adequacy of performance of gonioscopy and pachymetry in diagnosing glaucoma in the general ophthalmic clinic at a tertiary ophthalmic centre. To identify factors associated with under-performance of gonioscopy and pachymetry in diagnosing glaucoma.

Methodology
Medical records of patients scheduled for a general ophthalmic clinic session in May 2014 were reviewed. Patients with either addition of glaucoma medication or listing of laser iridotomy(LI) after 2004 were included. Data on demographics, performance of gonioscopy and pachymetry, and factors affecting their performance were retrospectively collected.

Result
92 eyes from 40 males(43.5%) and 52 females(56.5%), aged 73.5±12.2 years, were included. Among them, 74(80.4%) received an additional glaucoma medication,
17 (18.5%) were listed for LI, and 1 (1.1%) received both. Over half (57.6%) of the patients received gonioscopy during the course of their follow-up. Pachymetry was performed in only 33.7% of the patients. Gonioscopy was performed in only 50% of those being added on medication, but 94.1% of those listed for LI, with significant difference between the 2 groups (p=0.001, Fisher’s Exact test). 86.4% of patients diagnosed with angle-closure glaucoma received gonioscopy, which was highest among different types of glaucoma. The rate increased with IOP at diagnosis (odds ratio OR 1.10, p=0.023), and decreased with pseudophakic status (OR 0.18, p=0.019) on logistic regression. Performance of pachymetry varied across different types of glaucoma, with highest rate for normotension glaucoma (76.5%). It did not vary significantly between patients added on medication or listed for LI, and was not significantly influenced by duration of follow-up, VCDR or IOP at diagnosis. Further analyses for reasons deterring performance of gonioscopy and pachymetry in general ophthalmic clinic setting, education and re-audit would be needed to ascertain adequate glaucoma assessment by gonioscopy and pachymetry.