Glaucoma Screening Tool in General Practice

Evaluation of the FDT perimeter for detection of glaucoma.

eastMED Doctors 2005–2010
EARLY GLAUCOMA
ADVANCED GLAUCOMA
EXTREME GLAUCOMA
Glaucoma

- Wasting disease of the optic nerve
- Leads to irreversible blindness
- Early stages asymptomatic
- Late presentation with visual field loss
- Prevention is early detection and treatment
Glaucoma Facts

- Number 1 cause of preventable blindness NZ
- Prevalence rises 2% at 40yr to 10% at 80yr
- Important Public Health issue – falls, MVAs
- Raised IOP is not always present when glaucoma is damaging the optic nerve
- No screening method in the community
Optic cupping

Effect of Glaucoma

Normal optic nerve

Damaged optic nerve

Normal visual field

Abnormal visual field
Normal optic disc
Optic nerve cupping
Aim of our study

- To raise awareness of glaucoma
- Is screening in General Practice feasible?
- Quick reliable test
- Nurse operated
- Affordable
Method

- Humphrey Frequency Doubling Technology (FDT) Visual Field Instrument

- Patients > 40yrs

- Fee to patient $20

- Study approved by Regional Ethics Committee
- No instrument or patient set-up needed
- Screening test takes 45 seconds
- Portable
- Conduct the test in normal room lighting
- No special training needed
- Patient wears own glasses
Evaluates ganglion groups that are responsive to high rates of flicker and rapid motion

- M-cell nerve fibres constitute 15% ganglions

- Small square of light & dark stripes undergo rapid counterphase flicker which appears to double the number of bars present
The Test

- Patient fixes on a central spot and when a flicker change is detected presses the button.
- If not detected the threshold & duration is altered & the square retested.
Participants

- Information sheet
- Consent form
- Data sheet
- Abnormal results referred Ophthalmologist
- Normal results recalled for annual screening
Results

- 560 tests performed on 327 patients
- 69 patients with abnormal results – 21%
- 21 treated for glaucoma – 6.4%
- 44 other eye or neurological diagnoses
- 2 no pathology
Abnormal Results

- Normal 2
- Glaucoma 21
- Cataracts 14
- Macular degeneration 4
- Neurological 2
- Other 24
- Did not see a Specialist 2
Ophthalmologist

- Auckland Hospital Eye Clinic – 33%
- Private Ophthalmologist – 67%

- After diagnosis some transferred to ACH for surgery and/or ongoing management

- Referrals to ACH Eye Clinic were well received
Case 1

- Mr WC aged 73yrs
- VA 6/6 each eye
- IOP RE 32 LE 44mmHg
- L optic disc cupping
- Dx RE Ocular HT, LE narrow angle glaucoma
Case 1 Outcome

- Lumigan & Cosopt eye drops
- IOP RE 14 LE 18mmHg
- Bilateral peripheral laser iriditomies
- Drops F/U ACH
- Laser Iridotomy for narrow angles
- 5–10 mins
Laser peripheral iridotomy
Case 2

- Mrs RG aged 75yrs
- VA RE 6/6 LE 6/9
- IOP RE=LE 22mmHg
- Dx Early open angle glaucoma
Travatan eye drops

IOP RE=LE 15mmHg

Photographs 2007–10 diffuse thinning of neuroretinal tissue in both optic nerve heads

Back on drops
Case 3

- Mrs AP aged 46yrs
- VA 6/6 aided each eye
- IOP RE 28 LE 22mmHg
- RE sup arcuate scotoma
- Glaucomatous optic neuropathy
Case 3 Outcome

- Xalantan & Cosopt
- Bilat laser peripheral iridotomies
- IOP RE=LE 12mmHg
Conclusion

FDT method of screening for glaucoma in General Practice proved to be

- Reliable – 2 false positives No false negatives
- Affordable to pt. Fee generating for GP.
- Patient friendly
- Operator friendly
Glaucoma Screening in GP

- Reaches patients who do not see an Optometrist regularly
- As 100% pts diagnosed with glaucoma already had glasses this screening provides an adjunct to Optometrist assessments
- Abnormal results prompted thorough checks and found other disorders of the eye
- Rewarding for the Doctor
- Sight preserving for the patient
A Wicked Issue for GPs

- Modern technology enables visual field testing in General Practice

- Glaucoma is going undetected in our patients

- GPs have an important role in preventing blindness

- Record VA  Consider FDT