Ophthalmic Service Guidance

Joint RCOphth and UKEGS Glaucoma Risk Stratification Tool

July 2020
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Introduction</td>
<td>3</td>
</tr>
<tr>
<td>2  Risk Stratification Tool</td>
<td>3</td>
</tr>
<tr>
<td>3  References</td>
<td>5</td>
</tr>
<tr>
<td>4  Appendix 1: Examples of cases stratified by Glauc-Strat-Fast</td>
<td>6</td>
</tr>
<tr>
<td>5  Appendix 2: Glauc-Strat Fast Team, Development History and Intellectual Property</td>
<td>8</td>
</tr>
</tbody>
</table>

Date of review: July 2022
1 Introduction

There is a currently a clear need and requirement for a simple risk and complexity stratification tool for use in NHS delivered and NHS funded outpatient clinics treating glaucoma patients. This need has several contextual drivers which have come together in recent times to make such a stratification tool important. These are familiar to all clinicians and have been summarised in a series of actions and publications within the NHS in recent times – e.g. High Impact Interventions program Actions 2 and 3, HSI B report on glaucoma follow up and the NHS Long Term Plan ambitions for outpatient reform, often simply reduced to a target to transfer 30% of outpatient activity into the community. COVID -19 and its effects on the ability to deliver appropriate care further strengthens the need.

Documenting risk and complexity and subsequently matching these with appropriate clinical skill sets is not a new concept, as both the NICE glaucoma guidelines and the RCOphth glaucoma commissioning guidelines have done this within their recommendations.

In a purely clinical context a decision as to risk and complexity is taken every time a clinician sees a patient in outpatients and either discharges them or arranges a follow up appointment at a specific interval. This goes further as most units have established virtual, technician, nurse or optometrist run clinics with various levels of skills, supervision and governance to look after patients. It is always difficult to translate ‘clinical acumen’ into a formalised evidence based process, but clinical acumen is fundamentally informed and governed by evidence and so in principle there is no fundamental conflict in such a process as long as the degrees of ambiguity and uncertainty in any stratification process are acknowledged.

2 Risk Stratification Tool

The purpose of identifying, treating and monitoring glaucoma is to preserve a sighted lifetime. In the face of high demand and unmet need due to insufficient capacity, and the consequent risk of avoidable blindness from delays in glaucoma care, an agreed mechanism for identification of people at highest risk of sight loss is desirable. The document describes a clinical tool for classification of patients with glaucoma into strata of risk for significant future sight loss and an estimate of resource requirement for managing the patient. The tool was developed collaboratively between the RCOphth and UKEGS and acknowledges diagnosis, stage of disease, complexity of disease, rate of disease progression, life expectancy, ocular and systemic comorbidities, dependency and socio-economic deprivation. Examples of the use of the tool are provided in Appendix 1. An understanding of individual risk stratification supports service design and delivery by allowing the prioritisation of care and the use of an appropriate skill mix.

The approach is based on the ‘glauc-strat’ glaucoma visual field and clinical staging system (Appendix 2) initially developed by Shah et al., with adjustments to facilitate its use in NHS paper based and/or Electronic Medical Record (EMR) based glaucoma services with various levels of (sub-)specialisation. A Red-Amber-Green (RAG) table with nine subdivisions (1-3 within each band) forms the basis of the tool which is further augmented by red flag indicators and Plus (+) factors. Depending on circumstances and available resources, the tool can be used in its full form or reduced to a basic RAG system. The eye-level classification should be used to stratify patients according to the worse eye which has remaining useful vision, for which the patient is willing to undergo treatment to retain sight.
N.B Intellectual property rights for the Glauc-Strat-Fast risk stratification tool are owned by Professor Peter Shah at the Birmingham Institute for Glaucoma Research.

Notes:

- Clinical judgement remains paramount and each patient should be risk assessed at each monitoring visit as recommended by NICE (NG 81)
- Progression
  - A visual field progression rate sufficiently rapid to threaten sight within the patient’s expected lifetime should prompt discussion with the patient and action as appropriate, e.g. a woman aged 55y with a current MD of -5dB and a progression rate of 1dB/y loss would reach -20dB loss by the age of 70y, with a remaining life expectancy of 18y, while a man of 85y with a -5dB defect progressing at 1.5dB/y would reach -11dB within his remaining expected lifetime (average 6 years remaining until death at 91y).
  - Red Flag progression of >2dB loss in any single year indicates a high degree of urgency
  - Optic disc and RNFL features should be considered as is clinically appropriate
- Open Angles
  - Open Angle Glaucoma = NICE Chronic Open Angle Glaucoma (inc. PXF and PDS) and includes patients with and without elevated IOP (POAG & NTG)
  - 2o OHT = Uveitis, trauma, post-vitrectomy (oil) etc. without field or disc damage
- Occludable Angles
  - 1o Angle Closure Suspect = Occludable angles with no PAS or high IOP
  - 1o Angle Closure = Occludable angle with PAS and or high IOP
• Early 1o Angle Closure Glaucoma as above with disc and/or field changes
• Untreated angle closure suspects such as those who decline PI should remain in G2
• If not genuinely occludable (>180o) patients to be discharged from monitoring
• Successfully treated, resolved 1o Angle Closure and Suspects to be discharged from monitoring

• General
  • Ophthalmic and systemic co-pathology is relevant because a large proportion of patients in the UK are still seen in relatively ‘general’ clinic settings where the co-pathology will be managed by their treating clinician with a resultant increase in time and required training
  • Transport is used as a proxy indicator of dependency and to reflect the practical challenges encountered in dealing with these patients
  • Mental and physical disability cover a broad range, including dementia and immobility.

3 References

• UK Office for National Statistics (ONS) life expectancy calculator https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifefitness/articles/whatismylifeexpectancyandhowmightitchang e/2017-12-01 (accessed 12 May 2020)
Appendix 1: Examples of cases stratified by Glauc-Strat-Fast

Based on Mean Deviation (MD) visual field defect (dB) in worse eye.

   - MD -2.48 dB - Green
     - Early POAG R+L.
     - No red flags.
     - No Ophthalmic or Systemic factors.

[2] Female age 63. Bilateral panuveitis and CMO. Highest IOPs 54mmHg R+L. Sarcoidosis. T2 DM.
   - MD -6.71 dB - Amber
     - Moderate SOAG R+L.
     - Red flag for highest IOP >40 mmHg.
     - Ophthalmic (Uveitis / CMO) & Systemic factors (Sarcoid / DM).

   - MD -10.77 dB - Red
     - Advanced PACG R+L.
     - Red flag for severe drop allergies.
- R1 F+ / O+ / S-
5 Appendix 2: Glauc-Strat Fast Team, Development History and Intellectual Property

- The Glauc-Strat project was a 4-year research program to develop and implement a glaucoma staging tool that acts to stratify the risk of progressive loss of vision and the level of resource needed.
- The project is based in Birmingham, UK and is lead by Professor Peter Shah through the Birmingham Institute for Glaucoma Research in the Institute of Translational Medicine at University Hospitals Birmingham NHS Trust.
- The core research team includes Mr Imran Masood, Ms Freda Sii, Prof Graham Lee, Mr Jim Kirwan and Mr Simon Dulku.
- UK and international collaborators on the project include:

<table>
<thead>
<tr>
<th>Mr Joe Abbott UK</th>
<th>Prof Alastair Denniston UK</th>
<th>Mr Jim Kirwan UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Ashish Agar Aus</td>
<td>Mr Simon Dulku UK</td>
<td>Dr Mitchell Lawler Aus</td>
</tr>
<tr>
<td>Mr Faisal Ahmed UK</td>
<td>Prof Paul Foster UK</td>
<td>Prof Graham Lee Aus</td>
</tr>
<tr>
<td>Ms Nishani Amerasinghe UK</td>
<td>Prof Gus Gazzard UK</td>
<td>Mr Alastair Lockwood UK</td>
</tr>
<tr>
<td>Prof Augusto Azuara-Blanco UK</td>
<td>Prof Ivan Goldberg Aus</td>
<td>Prof Keith Martin Aus</td>
</tr>
<tr>
<td>Mr Imad Badran UK</td>
<td>Prof Paul Healey Aus</td>
<td>Mr Imran Masood UK</td>
</tr>
<tr>
<td>Prof Philip Bloom UK</td>
<td>Prof Roger Hitchings UK</td>
<td>Mr Shabbir Mohamed UK</td>
</tr>
<tr>
<td>Prof Rupert Bourne UK</td>
<td>Dr John Horsburgh Aus</td>
<td>Prof Tony Molteno NZ</td>
</tr>
<tr>
<td>Mr Mike Burdon UK</td>
<td>Mr Wojciech Karwatowski UK</td>
<td>Dr Desiree Murray Trinidad</td>
</tr>
<tr>
<td>Dr Jenn Burr UK</td>
<td>Prof Peng Khaw UK</td>
<td>Dr Katia Papastavrou Cyprus</td>
</tr>
<tr>
<td>Ms Lydia Chang UK</td>
<td>Mr Anthony Khawaja UK</td>
<td>Mr Heiko Philippin Tanz / Ger</td>
</tr>
<tr>
<td>Prof David Crabb UK</td>
<td>Prof Anthony King UK</td>
<td>Dr Ioanna Psalti UK</td>
</tr>
<tr>
<td>Prof Jon Crowston Singapore</td>
<td></td>
<td>Mr Alan Rotchford UK</td>
</tr>
</tbody>
</table>

- Between 2015 and 2020 the initial Glauc-Strat concept tool has gone through many iterations using a combination of 1:1 and focus discussion groups within the UK and abroad.
- Between 2017 and 2020 the tool has been implemented and extensively test-driven and refined in Birmingham, UK and Sydney, Australia.
- In 2020 the tool has been further developed and critically peer-reviewed by the UK and Eire (UKEGS) faculty.
- Glauc-Strat Fast is now undergoing further validation studies within the West Midlands region.