Glaucoma Patient Prioritisation Audit – Using an EPR system to identify high risk patients in a large chronic disease cohort

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Introduction

The SARS-CoV-2 pandemic has lead to significant pressure on already stretched hospital eye services across the UK with greater need to identify high-risk patients to prevent avoidable blindness from delays in treatment.

A glaucoma risk stratification tool, the Glauc-Strat-Fast, was developed in collaboration with RCOphth and UKEGS (Fig 1) in order to aid prioritisation of patients in order to ensure fair and equitable delivery of care.

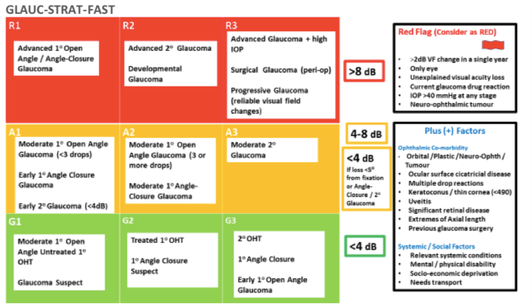


Fig 1: The Glauc-Strat-Fast tool

We describe the results of our audit applying this tool to our cohort of patients in order to stratify the risk of progressive loss of vision and level of resource needed.

Methods

All patients attending glaucoma clinic at Western Eye Hospital from January 2019 to December 2020 were included.

We approached Medisoft to create the clinical Audit Suite tool to identify these patients and their clinical data

Patients were categorised into;

- high-risk (Red),
- moderate risk (Amber) and
- low risk (Green) groups

This was based on their mean deviation from the most recent visual field, diagnosis, intraocular pressure changes, vision and progression on visual field as per the Glauc-Strat-Fast tool using the patient's worse eye

Results were only as good as the data inputted and relied on the accuracy of records on Medisoft

Results

- 6451 patients were included over the 24 month period
- Male to Female ratio - 49:51
- Average age 68.8 years (range 8 – 105)

Table 1 below shows the number of patients in each category

	Number of patients
RED	637 (10%)
AMBER	2739 (42%)
GREEN	3075 (48%)
Total	6451

Results – High Risk Progressors

Table 2 shows the diagnoses of the patients seen at our centre during the 24 month period

	No of patients
Primary open angle glaucoma	1698 (26%)
Ocular hypertension	1670 (26%)
Glaucoma suspect	2129 (33%)
Secondary open angle	201 (3%)
Acute angle closure	104 (2%)
Primary angle closure	495 (8%)
Chronic angle closure	171 (3%)
Pigment dispersion syndrome	170 (3%)
Pseudoexfoliation	178 (3%)

We performed a more in-depth analysis of our Red group (n=637) with fast progressors highlighted in Table 3 below

	No of patients	% of Red Category
Loss of two lines or more of vision in either eye	175	27.5%
Lost more than 2 lines and progression on VF of <-1.5dB	12	1.8%
Patients with IOP >40 at any point	41	6.4%
Progression on VF		
<-2.00 dB/year	18	2.8%
-2.00 to -1.51 dB/year	16	2.5%
-1.5 to -1.01 dB/year	30	4.7%
-1.00 to -0.51 dB/year	77	12.1%
-0.50 to -0.26 dB/year	63	9.8%
-0.25 to 0.00 dB/year	38	5.9%
Previous glaucoma surgery	342	54%
Only eye	88	14%
Active co-pathology		
Vitreoretinal	42	6.6%
Medical Retina	163	25.6%
Oculoplastics/Orbital	72	11.3%
Cornea	59	9.3%
Neuro-opthalmology/Strabismus	26	4.1%

- Average follow up time for Red group was 164 days (5 months)
- 66 patients (10%) did not have a follow up appointment date on the system at the time the audit was generated but all had been seen within the last 4 months

Results – Treatments and Visual Standards

Table 4 shows the current treatment regimens of the patients included in the audit

	No of patients
Patients on diamox	15 (0.2%)
Patients on 3 or more glaucoma drops	568 (9%)
Patients on 2 drops	1136 (18%)
Patients on 1 drop only	998 (15%)
Patients on no drops	3747 (58%)

	No of patients
Don't meet driving standards	503 (7.8%)
Severely sight impaired	170 (2.6%)
Partially sighted	36 (0.6%)
Meet driving requirements	5701 (88%)

Table 5 shows the visual standards of the patients included in the audit (included as plus factor based on the tool)

Conclusions

We are the first centre in the country to use the Medisoft Audit Suite to risk stratify our patients.

Using parameters from the Glauc-Strat-Fast tool, we were easily able to identify high risk patients through Medisoft and successfully apply the risk stratification tool to our cohort to better manage our resources.

The audit enabled:

- High risk patients (Red) in the period to be identified
- Ensured all high risk patients (Red) were seen at appropriate time
- Low risk patients (Green) to be identified and moved to appropriate diagnostic clinics
- Identification of patient co-morbidities to plan need for joint clinics with other services (MR/VR)
- Reassurance that patients were being appropriately managed pre-audit
- Development of an easy continuous audit cycle and starting point with which to assess patients.

This will be a continuous audit cycle with patients moving between the groups as parameters change and the audit tool has made it easier to do this.

Limitations of Glauc-Strat-Fast	Limitations of Medisoft
	Reliability of data
Does not include optic disc changes	
(VF) Investigation reliability	
Specific surgical data not analysed	

Advancements:
Incorporating OCT data on to Medisoft and the audit tool to include disc progression as a parameter for risk assessment

In conclusion the audit tool allowed a robust and easy risk assessment of our glaucoma service in order to adequately restructure and meet the growing demands post SARS-CoV2 pandemic.

References

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