Common Medical Retinal Conditions

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28th September 2019
Objectives

- Overview
- Referral pathways
- Treatments
- Updates
Ophthalmology Outpatient Activity

Five Treatment Specialties with the greatest number of attendances with the corresponding non-attendances, 2017-18

- Ophthalmology
- Trauma & Orthopaedics
- Physiotherapy
- Diagnostic Imaging
- Obstetrics

Ophthalmology, Trauma & Orthopaedics and Physiotherapy specialities have recorded the highest levels of attendances in 2017-18 with 7.6 million and 5.0 million attendances respectively.

The five most common treatment specialties account for 30 per cent of all outpatient attendances.

Diagnostic Imaging recorded the lowest ratio between attended and did not attend appointments with approximately 83 attendances for each appointment where the patient did not attend.

Source: NHS Digital
For more information: Summary Report 7, Hospital outpatient activity, 2017-18
Diabetes Prevalence 2018

Prevalence refers to the number of people currently diagnosed with diabetes. There are 3.8 million people who have been diagnosed with diabetes in the UK.

<table>
<thead>
<tr>
<th>Prevalence</th>
<th>2017-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>3,222,559</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>96,114</td>
</tr>
<tr>
<td>Scotland</td>
<td>295,753</td>
</tr>
<tr>
<td>Wales</td>
<td>195,693</td>
</tr>
<tr>
<td>UK</td>
<td>3,809,119</td>
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</table>

https://www.diabetes.org.uk/resources
Diabetic Retinopathy

Sight loss

1. More than 1,700 people have their sight seriously affected by their diabetes every year in the UK.
   That’s more than 30 people every week.

2. Diabetes is responsible for 5% of all sight loss in the UK.

3. 7% of people with newly registered sight loss have diabetes in England and Wales.

4. Diabetes is one of the leading causes of preventable sight loss in the UK.

5. 14% of working age people who have severe visual impairment have diabetes.

6. Diabetes makes you one and a half times more likely to get glaucoma and twice as likely to get cataracts. Both can lead to sight loss.

7. Almost half of people with Type 1 diabetes have some form of diabetic retinopathy.

8. More than a quarter of people with Type 2 diabetes have some form of diabetic retinopathy.

9. After 20 years of living with diabetes almost:
   - everyone with Type 1 will have some degree of retinopathy.
   - two thirds of people with Type 2 will have some degree of retinopathy.

https://www.diabetes.org.uk/resources
**Figure 2** Ten-year change in causes of severe sight impairment (blindness) in England and Wales in working age adults (age 16–64): certifications 1999–2000 and 2009–2010.

Pathway

Diabetic Eye Screening Programme (DESP)

Hospital Eye Services (HES)
Diabetic Retinopathy Grading

<table>
<thead>
<tr>
<th>Grade of retinopathy</th>
<th>Description</th>
<th>Features</th>
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<tr>
<td>Retinopathy</td>
<td>R0 None</td>
<td>None</td>
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<tr>
<td></td>
<td>R1 Background</td>
<td>Microaneurysms&lt;br&gt;Retinal haemorrhages</td>
</tr>
<tr>
<td></td>
<td>R2 Pre-proliferative</td>
<td>Venous beading&lt;br&gt;Venous loop or reduplication&lt;br&gt;Intraretinal microvascular abnormality&lt;br&gt;Multiple deep, round, or blot haemorrhages, and hard exudates&lt;br&gt;Cotton wool spots in addition to the above features</td>
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<td>R3 Proliferative</td>
<td>New vessels on disc&lt;br&gt;New vessels elsewhere&lt;br&gt;Preretinal or vitreous haemorrhage&lt;br&gt;Extensive fibrovascular proliferation&lt;br&gt;Preretinal fibrosis ± tractional retinal detachment</td>
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<td>M Exudate within 1 DD of centre of fovea&lt;br&gt;Circinate or group of exudates within the macula&lt;br&gt;Retinal thickening of ≤1 DD of centre of fovea</td>
<td>Any microaneurysm or haemorrhage within 1 DD of centre of fovea only if VA ≤6/12</td>
</tr>
<tr>
<td>Photocoagulation</td>
<td>P Focal or scatter laser scars</td>
<td></td>
</tr>
<tr>
<td>Other lesions</td>
<td>OL Non-diabetic lesions as ARMD</td>
<td></td>
</tr>
<tr>
<td>Unclassifiable</td>
<td>U Ungradable</td>
<td>For example, if media opacity, poor photographs</td>
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Abbreviations: ARMD = age-related macular degeneration; DD = disc diameter; VA = visual acuity
* Sight-threatening diabetic retinopathy includes R2, R3, M, presence of focal or scatter laser scars

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R3S
Referable Retinopathy to HES

M1, R2 and R3A grades – monitored in HES
These patients are then suspended from DESP

Treatment given using:
Multidisciplinary management to optimise DM control
Laser-focal (M1) or pan retinal (R3A)
Anti-VEGF intravitreal injections (M1)
Steroid intravitreal injections (M1)
Cataract surgery
Age-related Macular Degeneration

Definition:
• Progressive deterioration of the macula with age.

Symptoms
• Blurring of central vision
• Metamorphopsia (distortion)
• Altered coloured vision
• Difficulty in dim light
• Loss of contrast sensitivity
‘Dry’ and ‘Wet’ AMD
Risk Factors

• AGE
• Smoking-doubles the risk
• Race-more common in Caucasians
• Family history and genetics
  - Higher risk with positive family history
  - Nearly 20 genes identified.
• Risk reduced by eating healthy diet, regular exercise, reducing ultraviolet light exposure.
Dry Macula Degeneration
Wet Macula Degeneration
Referral Pathway

‘Wet’ AMD is an urgent condition
Diagnosis to treatment within 2 weeks\(^1\)

Optometrists fast track referrals directly to the AMD Co-ordinator

Dry AMD can be monitored by Optometrist

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1) RCOphth: Age-Related Macular Degeneration: Guidelines for Management September 2013
Treatment

Anti-VEGF intravitreal injections is first line treatment since 2008 in the NHS - Lucentis - Eylea

Incidence of legal blindness from age-related macular degeneration in Denmark: year 2000 to 2010.
SB Bloch, M Larsen, I.Munch. AJO 2012
Retinal Vein Occlusions

- Classified according to location and degree of ischaemia
  - Central
  - Hemi
  - Branch
  - Ischaemic/non-ischaemic
Retinal Vein Occlusion

- Blockage of a portion of the venous circulation that drains blood from the retina.
  - build up of pressure in the capillaries
  - haemorrhage and leakage of blood and fluid
  - non-perfusion of capillaries
  - neovascularisation
Retinal Vein Occlusion

Epidemiology
- CRVO more common in > 65, BRVO > 50
- BRVO 3x more common than CRVO
- Causes: Age, Hypertension, Diabetes, Smoking, Obesity, Hypercoaguable states (Polycythaemia vera, sickle cell, leukaemia, lymphoma, inflammatory conditions)

Glaucoma

Symptoms
- Sudden painless drop in vision (asymp. in BRVO)
- Dense central scotoma
- Non-ischaemic type may have more subtle symptoms
Central Retinal Vein Occlusions

- Blurred disc margin
- Haemorrhages in all 4 quads
- Flame-shaped haemorrhages
- Cotton wool spots
- Tortuosity and ingorgement of veins
Branch Retinal Vein Occlusions
Referral Pathway

Usually via Optometrist/GP on an urgent basis

Treatment:

• Anti-VEGF intravitreal injections
• Steroid intravitreal injection
• Laser for significant ischaemia
Updates

New intravitreal injections
- Brolucizumab (Novartis)
- Faricimab (Roche)
- Abicipar (Allergan)
- Portal Delivery System for Ranibizumab (Genentech/Roche)
Questions

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