Detection & Management of Retinal Emboli in a County Diabetes Retinal Screening Programme – an audit

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Conclusion

- A systematic approach to evaluation of patients with retinal emboli (RAE) is another step in vascular risk management of patients with DM

- Moderate to severe carotid artery disease are a common finding amongst patients with RAE

- Limited information to recommend surgery

- Whether or not this approach affects long term outcomes remains to be established
Background

• Retinal arteriolar emboli (RAE) are detected in 1.3 – 1.4% of the adult population¹

• Associated with an excess risk of all-cause and stroke related mortality.²,³

• May originate from atheromatous carotid arteries or degenerate cardiac valves

• Incidental detection during diabetic retinal screening allows risk management and surgical intervention where appropriate

Process

• Images of incidentally discovered RAE are scrutinised by an experienced clinician (AFM)

• Letter sent to the primary care informing
  – Implications of the findings
  – Pharmacological preventative therapy
  – Need for carotid doppler sonography (+/- surgical referral), where appropriate
Results

• Between January 2008 and August 2009, 16532 patients attended for retinal screen

• 66 patients identified with RAE (median age 72 years; range 45 – 90)

• 23 (38%) classified as cholesterol or platelet-fibrin emboli. 15(23%) had calcific. Rest (39%) unclassified.

• 25 (42%) had carotid doppler studies
Results

• 13(23%) patients had a previous history of cerebrovascular disease.

• Further 19(30%) had a history of IHD. 6(9%) had both.

• 80% had antiplatelet/anticoagulant therapy (ALL patients with history of stroke AND all who had carotid dopplers)
## Results

### Carotid Doppler Findings (N=25)

<table>
<thead>
<tr>
<th>Degree of stenosis</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild (0 – 30%)</td>
<td>13 (52)</td>
</tr>
<tr>
<td>Moderate (30 – 70%)</td>
<td>4 (16)</td>
</tr>
<tr>
<td>Severe (&gt;70%)</td>
<td>8 (32)</td>
</tr>
</tbody>
</table>

### Severe Stenosis (N=8)

- 2 patients had endarterectomies (1 stroke post procedure)
- 1 patient died
- 1 had bilateral occlusion (no further evaluation)
- 4 patients <75 years had no intervention (1 with history of CVA)
Discussion

- Our numbers are smaller than those in population prevalence studies
  - incidental discovery
  - number of fields

- 80% on antithrombotic treatment.\(^4\)

- 50% patients with a severe carotid artery stenosis did not have intervention (reasons unclear)
CV risk in Type 2 diabetes approaches the risk in patients with a history of MI

Diabetes – Interventions

• Steno 2 Trial – Aggressive multifactorial target-driven interventions reduce CVD in high risk individuals by 50%

• Comparable (Alphabet) Strategy (developed in George Elliott Hospital showed comparable results).

A
B
C
D
E
F
G
Diabetes – Interventions

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  A. Advice
  B. Blood pressure
  C. Cholesterol
  D. Diabetes control
  E. Eye screening
  F. Foot Screening
  G. Guardian drugs
Diabetes – Interventions

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  Advice
  Blood pressure
  Cholesterol
  Diabetes control
  Eye screening
  Foot Screening

  Guardian drugs – e.g. Aspirin
Carotid Artery Stenosis (Asymptomatic Vs Symptomatic)

• Good evidence that CEA beneficial in symptomatic patients\(^1\)

• Evidence of benefit in asymptomatic patients limited\(^2\)

• Limited information for patients with DM
  – ? higher rates of peri-operative complications\(^3\)

• Very little information for patients with RAE

1. Cochrane Review; 2. Cochrane review; 3. SMART
Current Practice

• All patients invited to diabetes centre for
  – Clinical evaluation
  – Education
  – Investigation
  – Follow up

• Follow up
• Audit loop
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