STROKE

BLOOD COAGULATION AND FIBRINOLYSIS IN ACUTE STROKE AND VASCULAR DEMENTIA: A CASE CONTROL STUDY

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Introduction

There has been recent interest in the possible role of abnormalities of blood coagulation and fibrinolysis in the pathogenesis of cardiovascular disease.

Methods:

We studied 82 patients with acute stroke, 42 with vascular dementia and 40 normal controls (mean age 73, 74 and 72 years) in a prospective case control study. Stroke patients were assessed at 3-10 days and 1-3 months. Venous blood was drawn to assay haemostatic components.

Results (mean values)

<table>
<thead>
<tr>
<th>CONTROLS</th>
<th>STROKE (3-10 days)</th>
<th>STROKE (1-3 months)</th>
<th>VASCULAR DEMENTIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=40</td>
<td>FIB</td>
<td>3.7</td>
<td>5.2</td>
</tr>
<tr>
<td>FDP</td>
<td>134.2</td>
<td>456.0</td>
<td>341.8</td>
</tr>
<tr>
<td>VWF</td>
<td>154.9</td>
<td>225.6</td>
<td>213.4**</td>
</tr>
</tbody>
</table>

* p≤0.001 ** p≤0.005 compared to controls (Mann Whitney U-test).

Levels of fibrinogen (FIB), fibrin D-dimer (FDP) and von Willebrand factor (VWF) were elevated in all patient groups.

Conclusions

These results suggest that increased fibrinogen (FIB), fibrin turnover (FDP) and endothelial disturbance (VWF) may contribute to cerebrovascular disease including vascular dementia.

STROKE PREVENTION: DO CONTROLLED TRIALS INFLUENCE MAINSTREAM PRACTICE?

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Background: Several well-designed studies have shown that identification and treatment of risk factors reduces stroke. The impact of these studies on mainstream practice remains unknown.

Methods: A hospital based stroke register was used to study the prevalence and management of risk factors in patients admitted to a district general hospital serving a population of 310,000 over 3 years. Data were collected on the frequency of known risk factors in patients with incident stroke fulfilling the WHO criteria. First and recurrent stroke were included. Diagnosis was confirmed by a CT scan in over 90% of patients. Criteria for identifying index risk factors and their management were defined in advance against which risk management prior to the stroke was compared and time trends analysed.

Results: The register included 1174 patients over 3 years. There were no significant differences in patient characteristics, stroke pathology or severity over the 3 year period. The number of patients with known hypertension (41-46%), diabetes (12-13%), smoking (18-24%) and previous stroke or TIA’s (21-31%) did not increase with time. More patients were known to have atrial fibrillation (18 to 26%) and hyperlipidaemia (2 to 8%) in year 3 compared with year 1. The number of patients being treated for cerebrovascular disease (59% to 85%), atrial fibrillation (18 to 59%) and hyperlipidaemia (25 to 64%) increased significantly over 3 years. This increase was not seen for hypertension (54 to 59%) or advice on smoking (66 to 70%).

Conclusions: Mainstream practice is influenced by research in stroke prevention. This influence appears to be greatest for newer interventions such as antithrombotic measures, management of carotid disease and hyperlipidaemia, rather than for smoking or hypertension.

PATHOPHYSIOLOGY OF DYSPHAGIA FOLLOWING ACUTE STROKE: A CASE CONTROL STUDY

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Introduction

Dysphagia is a common and potentially fatal complication of acute stroke. However, the underlying pathophysiology remains controversial.

Methods

We conducted a case control study comparing acute stroke patients (n=23, mean age 72 years) with normal controls (n=15, mean age 76 years). A standard water swallow test was abnormal in 11/22 (50%) stroke patients. Videofluoroscopy was used to assess laryngopharyngeal motor function for boluses of various volumes and consistencies (liquid, semi-solid, solid).

Results

Vocal cord mobility and voluntary pharyngeal squeeze were impaired in the stroke group compared to the controls (13/21 vs 1/9, p=0.01, 10/20 vs 0/9, p=0.03). Pre-swallow spillage and post-swallow residue at the level of the vallecula were seen with all swallow consistencies in both groups. Pre-swallow spillage was more common with liquid and post-swallow residue with solid boluses. Initiation of epiglottic tilt was delayed in the stroke group for semi-solid (2.72 vs 0.89 secs, p=0.02) and solids (6.58 vs 1.43 secs, p=0.01).

Conclusions

Laryngopharyngeal motor dysfunction associated with a delay in initiation of the swallow and reduced airway protection is common after acute stroke. Videofluoroscopy may be a useful method of assessing response to intervention.