MANAGEMENT OF STROKE PATIENT
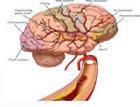
"Hospitalised stroke patients spend most of the time in direct care of nurses" Ellul et al 1993

Joe Camilleri

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Introduction

- Fortunately the incidence of Stroke has dropped since the 60's due to the **treatment of hypertension**. However, there has been a small increase due to longer life spans.
- Stroke is the **3rd ranking cause of death** in many countries including Malta
- Stroke is the most common cause of **severe disability**
- 1 in 4 men and 1 in 5 women are expected to have a stroke by age 85

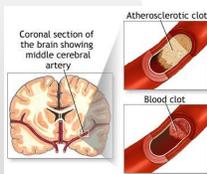jc   2

WHAT IS A STROKE CVA)?

- A **medical emergency** in which blood flow to the brain is either:

  blocked (ischaemic stroke)

  or

  ruptured (haemorrhagic stroke)

Coronal section of the brain showing middle cerebral artery

Atherosclerotic clot

Blood clot

ADAM.

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CAUSES

- **THROMBOSIS**: Blood clot within a blood vessel of the brain or neck due to arteriosclerosis. Most common cause of stroke
- **CEREBRAL EMBOLISM**: Blood clot or other material carried to the brain from another part of the body. Associated with heart disease e.g. RHD, MIs, Infective endocarditis
- **CEREBRAL HAEMORRHAGE**: Rapture of a cerebral blood vessel with bleeding into the brain tissue or spaces surrounding the brain. Most often secondary to arteriosclerosis and HTN after age 50. Most common cause of death due to CVA.

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RISK FACTORS

Controllable Risks

Alcohol & drug use
Cigarette smoking
Being overweight or obese
Physical inactivity
High cholesterol
High blood pressure (hypertension)
Cardiovascular disease
Diabetes
Atrial Fibrillation (rapid or irregular heartbeat)
Blood disorders
Transient Ischemic Attack
Psychological stress
Use of certain medication (anticoagulants)

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Uncontrollable Risks

Gender (risk higher for males)
Age (risk increases over 55)
Family history of strokes
Personal history of stroke or heart attack
Race or ethnicity

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Prevention

Monitor Blood Pressure

Control other Medical Conditions (e.g. DM)

Manage Stress & Depression

Live a Healthy Lifestyle (Exercise, No smoking,
low fat/low sodium diet)

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TYPES OF CVAs
Classification according to Hewer and Wade (1986)

1. By cause: Thrombus, Emboli, Haemorrhage
2. Effect on brain tissue: Infarction, Haemorrhage
3. By artery involved: Carotid, Vertobasilar
4. By location or size of affected tissue: Hemisphere stroke, Brain stem stroke, Lacunar stroke
5. By duration of symptoms: under 24 hours-a TIA, under 3 weeks-a reversible ischaemic neurological deficit, over 3 weeks-a complete stroke
6. With symptoms: with paralysis-a hemiplegic stroke, with speech loss, many other complexes

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SIGNS AND SYMPTOMS
Hewer and Wade (1996) and other authors describe and classify as follows:

Effects on mental state
- Unconsciousness-30-40%
- Confusion-45% of those conscious
- Ignoring one side-uncommon
- Severe headaches

Physical losses
- Paralysis on one side (hemiplegia)-50-80%
- Difficulty in swallowing-30%
- Alteration to touch and feeling-25%
- Disturbance of vision-7%

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SIGNS AND SYMPTOMS
Cont'd

- numbness/weakness in face, arm or leg
- dizziness or loss of balance
- Sudden blurred or decreased vision

Effects on communication (if conscious)
- Slurring of speech-35-50%
- Loss of language-30%

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COMPLICATIONS

- **CEREBRAL HYPOXIA**: Minimised by providing adequate oxygenation of blood to the brain
- **DECREASE IN CEREBRAL BLOOD FLOW**: Cerebral blood flow is dependent upon the blood pressure, cardiac output, and integrity of cerebral blood vessels. Adequate hydration to improve blood flow. Correct dysrhythmias in a.fibrillation
- DVT, Pneumonia, Pressure sores, UTI, Contractures, Shoulder pain/dislocations, Depression

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TIAs/ "Mini-strokes"

- TIA is a **warning sign** and not a stroke. It does not cause permanent damage. Signs and symptoms last 10 minutes to one hour, then disappear. As a general rule when S&S last longer than 24 hours, an infarction has occurred.
- Pathologies that may resemble CVA are epilepsy, severe migraine, multiple sclerosis, Parkinson's disease and cerebral tumour.
- S&S: Confusion, drowsiness, dizziness, headaches, visual field defect, transient loss of speech, facial paralysis, hemiplegia.

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Visual Field Defect

Field of View - Left Eye   Field of View - Right Eye

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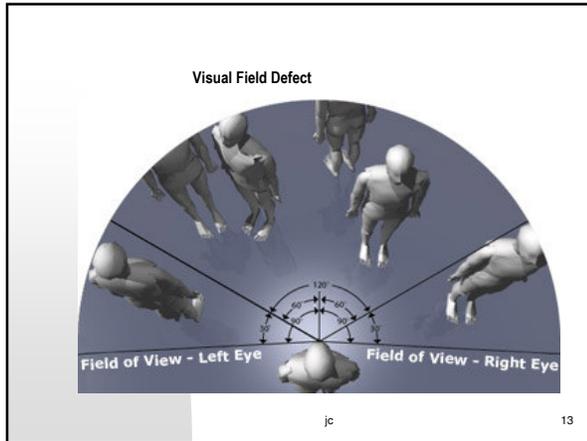
DRUG THERAPY
**Aim to improve and restore circulation to the brain.**

- **Anticoagulants**: prevent further development or propagation of thrombus or embolisation elsewhere. **Highly contraindicated in CVAs of haemorrhagic nature**. Heparin, warfarin
- **Diuretics**: to reduce cerebral oedema
- **Antiplatelets**: to reduce thrombus/emboli formation e.g. Aspirin
- **Antihypertensives**: reduce pressure on cerebral blood vessels. Caution not to decrease BP too quickly or too low.
- Other drugs: Steroids, IV Dextran, arterial and venous dilators (praxalene), antidepressants

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SURGERY

- Very occasional, surgery on the brain such as Carotid Endarterectomy, embolectomy and craniotomy might be indicated
- Most haemorrhages are absorbed naturally and surgery is uncommon in the treatment for CVAs
- In reality, there is no effective specific treatment for CVA that will limit the brain damage caused by stroke and thereby reduce morbidity and mortality

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Endarterectomy   Copyright SVS 2004

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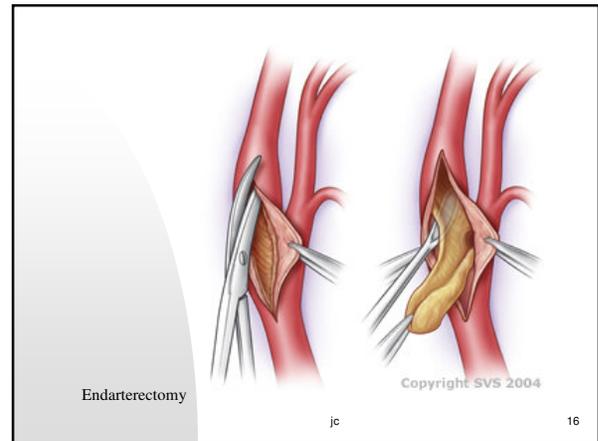
PREHOSPITAL CARE

- **Should require same high dispatch treatment and transport priorities as for patients with trauma and AMI**
- **Support Airway, oxygenation, ventilation and circulation**
- **Rapid identification of stroke using stroke scale**

STROKE SCALE

- **Facial Droop (have patient show teeth and smile)**
Normal-both sides of face move equally
Abnormal-one side of face does not move as well as the other side
- **Arm Drift (patient closes eyes and hold both arms straight out for 10 sec)**
Normal-both arms move the same or both arms do not move at all
Abnormal-one arm does not move or one arm drifts down

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STROKE SCALE

- **Abnormal Speech (have patient say "you can't teach a dog new tricks"**

Normal-patient uses correct words with no slurring

Abnormal-patient slurs words, uses wrong words, or unable to speak

INTERPRETATION: If any of the 3 signs is abnormal, probability of stroke is 72%


NURSING MANAGEMENT

ACUTE PHASE:
- Complete nursing assessment. Information from accompanying relatives
- Patient assigned bed in acute area nearest nurses' station. ABC
- Regular observations and assessment: level of consciousness, confusional state, degree of paralysis (paralysis of limbs not associated with poor outcome), swallowing reflex performed by senior nursing staff with great caution to prevent choking/aspiration pneumonia, 2-hourly TPR and BP, BGMs, basal weight, fluid balance.
- Medications and drug history are usually stopped and reviewed

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NURSING MANAGEMENT
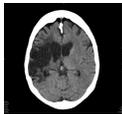
- AOS if critical
- Fast accurate diagnosis of CVA is essential. Urgent CT scan, U/S Scanning, Angiography must be planned
- Raise head of bed by 30 degrees to prevent aspiration. In unconsciousness, patients should be nursed sideways. A guedel airway must be considered.
- Maintain body alignment and support affected limbs with pillows at an early stage to avoid future complications
- 2-hour turning and protect all sites liable to develop bedsores

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NURSING MANAGEMENT

- When scanned inform medical staff to check results
- Urinary catheterisation might be considered (watch out for complications). A nappy might do quite well
- Maintain body fluids. Slow rate IV infusions
- NG tube feeding not indicated at an early stage
- Continuous psychological support especially in hemianopia (half-blindness)

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What It's Like

This is how a street scene looks with normal vision.

Example of a Hemianopia.

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NURSING MANAGEMENT

RECOVERY PHASE
- When diagnosis established, a full assessment from MDT initiated a day or two after admission
- Ambulated as soon as possible (day after and if condition permits)
- Recheck swallowing reflex with water. In signs of choking put NIL BY MOUTH label near bed. If dysphagia persists for more than 8 days inform speech therapist and dietician. NG feeding started, IVI stopped. (PEG considered long term)
- If dysphagia not severe use 'thickening agents' with solids. Avoid liquids. Inspect mouth for food boluses after meals and regular oral hygiene

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NURSING MANAGEMENT

- For the paralysed leg, keep a close look for DVT. Note swelling and redness
- For the paralysed arm, great care when handling the patient. Avoid slings. Active and passive limb movement should continue. Elevation of hand and application of gloves and bandages might be helpful for oedematous and cold arms
- Pressure sores, constipation and chest infections are other complications that nurses might observe
- Address agnosia (sensation without perception)
- Promote bladder control

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REHABILITATION

- Physiotherapy (prevent deformities, retrain affected limbs, prevent spasticity/flaccidity) Leg function before arm, arm function before hand, sitting balance before standing balance
- Occupational therapy (gain independence)
- Social workers/psychologists, Family support workers (social integration)
- Dentist
- Dietician
- Team conferences

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COMMUNICATION

- Nursing staff might keep in mind that the patient might be distressed simply because of limited communication
- Patients complain that the staff talk to them as if they are stupid or deaf. The use of baby talk, shouting and exaggerated hand/body movements might further distress them. Finishing the sentence for the patient, pretending to understand or to ignore the patient are nursing faults to avoid

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COMMUNICATION DISORDERS

- Confusion: Safety is a priority (bedsides, close supervision)
- Aphasia: Loss of use of language (inability to find the correct words and the use of nonsense words). Speech, writing and reading are effected.
- Apraxia: Uncommon. Difficulty in performing learned movement. Speech clumsy, faltering and incorrect sounds used. Difficulty in walking and dressing.
- Dysarthia: Common. Speech slurred. Patients understands well and uses language properly however become withdrawn within themselves when they find people unable to understand them

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HOW TO COMMUNICATE
HEWER AND WADE (1996)

- Allow time for understanding and to talk
- Speak slowly and clearly at a normal volume
- If necessary, repeat using different words
- Gestures, not too exaggerated, often help
- Do not change subject too quickly
- Encourage all his/her attempts
- Avoid long rambling conversation
- Remember he is easily distracted
- Remember, he is an intelligent adult

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CONCLUSION

- Most recover within 6 months
- Further gains do occur over the next 2 years
- **A third get better, a third go nursing homes, a third die**
- **SMART** goal settings: **S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime-framed
- Stroke Rehab Units saves lives
- Ongoing education for Health Care Professionals and the public
- Statistical research

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PUBLIC AWARENESS

FAST

- **F** is for **facial numbness or weakness**, especially on one side.

  A is for **arm numbness or weakness**, especially on one side.

  S is for **slurred speech**, or difficulty speaking or understanding.

  T is for **time; it's time to call 112** because every second counts

RESOURCES

- American Heart Association
www.americanheart.org
- American Stroke Association
www.strokeassociation.com
- The Stroke Association
www.stroke.org.uk
- World Health Organisation, 2006
www.who.org

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