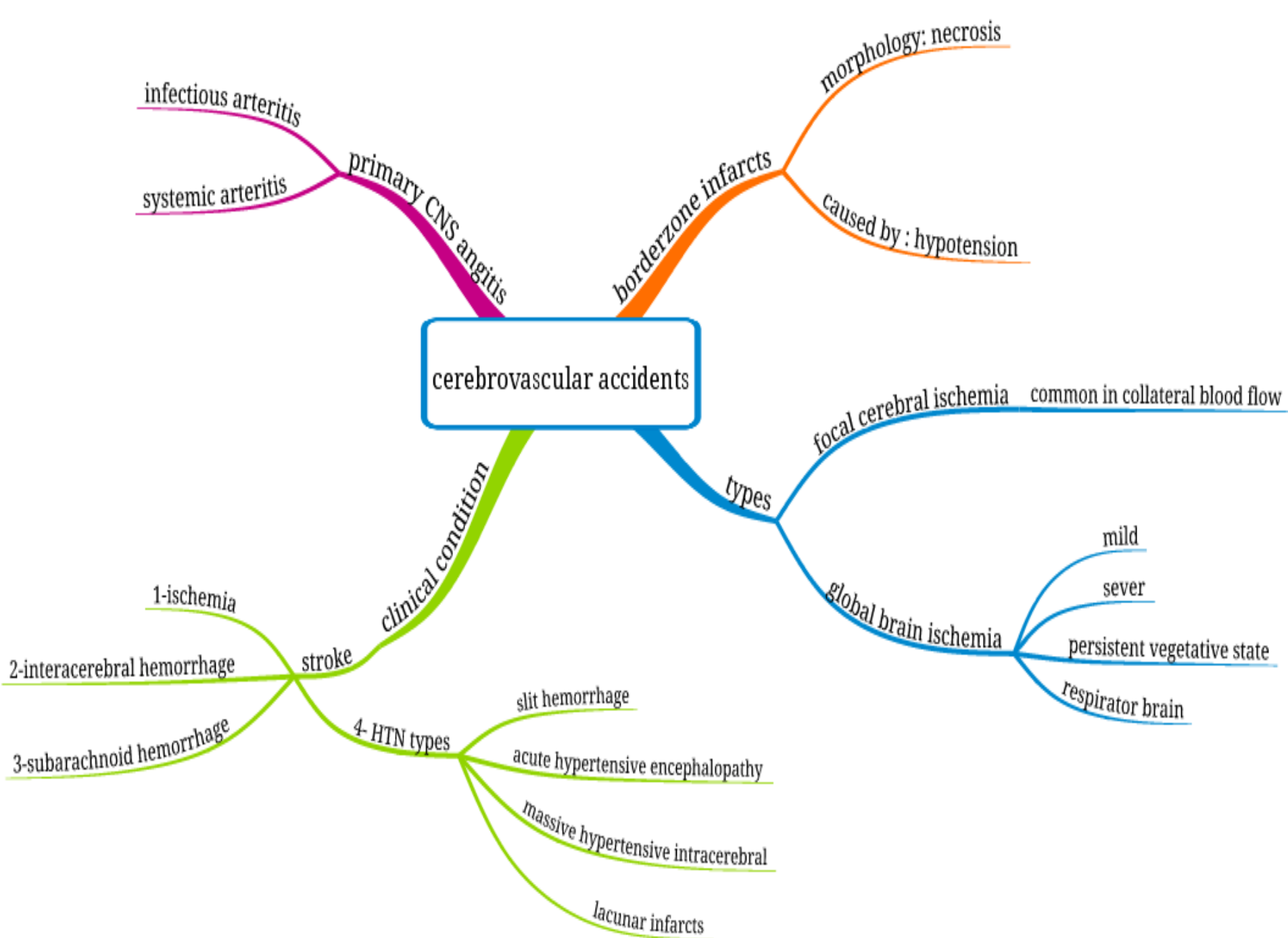




# Quick review of CVA

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**Cerebral ischemia:** is a condition in which there is insufficient blood flow to the brain to meet metabolic demand.

**Types:**

**1- Focal cerebral ischemia:** a blood clot has occluded a cerebral vessels (collateral flow is the common site), in specific area of brain. (can be either caused by thrombosis or embolism)

**2- Global brain ischemia:** blood flow to widespread areas of the brain is severely compromised

**Global brain ischemia is caused by :**

- 1- Cardiac arrest
- 2- Hypovolemic shock, septic shock
- 3- Chronic carbon monoxide (CO) poisoning

**Morphology:**

- 1- **Gross:** Brain is swollen, with wide gyri and narrowed sulci
- 2- **Histopathology:** Red neurons (12 to 24 hours after the insult)

**May lead to**

- 1- Persistent vegetative state (**الحالة الخضرية المستديمة**)

هي اضطراب في الوعي يكون فيه المرضى المصابون بأضرار خطيرة في المخ في حالة تهيج جزئي بدلاً من كونهم في حالة وعي حقيقي. وتختلف عن الغيبوبة كونها قد يوجد فيها اليقظة والنوم، والاحساس، والمشاعر، والتعبير، وفتح العينين ، والكلام غير المفهوم او الصراخ. وبعد أربعة أسابيع من الدخول في الحالة الخضرية، يتم تصنيف هذا التشخيص على أنه حالة خُضرية دائمة

- 2- Respirator brain (Brain death): Brainstem damage, which patient cannot breathing (**we put him in mechanical ventilation**), so the brain gradually undergoes an autolytic process

# Strokes

**Definition:** sudden loss of blood circulation to an area of the brain, resulting in a corresponding loss of neurologic function (clinical term)

- Increased incidence with age
- More common in men than women

**Symptoms:** Depends on which part of the brain is injured, and how severely it is injured

Types of strokes	
1- Ischemic (70%-80% of cases)	A- Atherosclerotic (thrombotic) <b>Most common type</b>
	B- Embolic
2- Intracerebral hemorrhage	
3- Subarachnoid hemorrhage	
4- Lacunar stroke (due to HTN)	



## 1- (A) Atherosclerotic (thrombotic)

Most common overall type of stroke

**Pathophysiology:** caused by a platelet thrombosis that develops over a disrupted atherosclerotic plaque

**Common locations include:**

- 1- Middle cerebral artery (MCA; most common location)
- 2- Internal carotid artery near the bifurcation
- 3- Basilar artery

## 1- (B) Embolic stroke

Ischemic type of stroke due to embolization

**Source of emboli:** Most often originate from the left side of the heart  
EX; Mural thrombi, after acute MI; valve vegetations, Atrial fibrillation  
**OR** fat embolism, amniotic fluid embolism

**Common locations include:** Most occur in the MCA



## 2- Intracerebral hemorrhage

- Most often due to stress imposed on vessels by hypertension

## 3- Subarachnoid hemorrhage

Majority cause is secondary to rupture of a saccular (berry) aneurysm.

### Common sites:

- Anterior communicating artery
- Rupture releases blood into subarachnoid space

**Clinical finding:** severe occipital headache; described as worst headache ever

### Complications:

- 1- Further hemorrhage
- 2- Permanent neurologic deficits

## 4- Lacunar stroke

- Cystic areas of microinfarction < 1 cm in diameter

**Cause:** Hyaline arteriolosclerosis\*

\*Secondary to hypertension