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MRCPsych General Adult Psychiatry

Organic Psychiatry

Developing people
for health and
healthcare

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Organic Psychiatry

Objectives

To develop an understanding of:

- organic psychiatric disorders.
- the psychiatric consequences and aspects of brain disease, damage (including stroke) and dysfunction.
- brain imaging studies and develop skills for critically appraising them.

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To achieve this

- Case Presentation
- Journal Club
- 555 Presentation
- Expert-Led Session
- MCQs

Please sign the register and complete the feedback

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Expert Led Session

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Organic conditions with psychiatric clues:

- Endocrine (5 cases)
- Infective (2 cases)
- Metabolic (1 case)

Previous lectures that complement this session: Investigating psychosis lecture during psychosis across the ages session; Neuropsychiatry academic day lectures; delirium and dementia lectures

Caveats

- The list of medical conditions that may present with changes in mental state examination is vastly beyond the scope of a single lecture

- The following cases and conditions will hopefully serve as an introduction to what should be considered routinely along with smaller print conditions that should not be forgotten when constructing differential diagnoses

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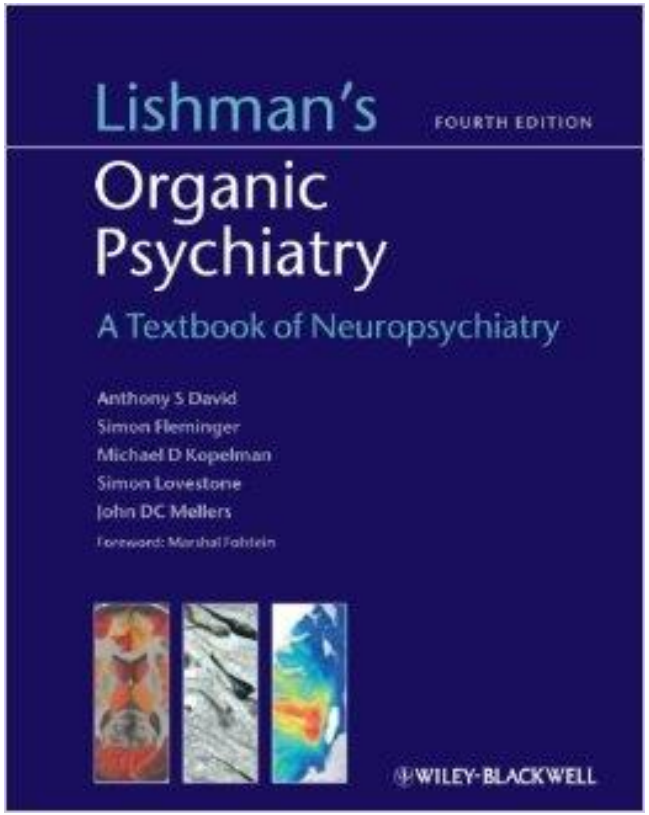
A reference textbook

- Lishman's Organic Psychiatry (4th Edn 2012)



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Case

- Mrs E is 66. She is brought in by her daughter, who has become concerned about her mental state. Mrs E believes she is married to a Russian prince, who visits her every day at home.
- On examination she has bradycardia, cold peripheries, slow relaxing reflexes in both upper limbs and lower limb oedema
- Bloods reveal hypercholesterolaemia, hyponatraemia, hyperprolactinaemia, anaemia
- Thoughts?

Hypothyroidism

- 15% patients with depression have hypothyroid states (mostly subclinical)
- 25%depressed patients show an altered response to TRH stimulation
- Risk populations
  - Age >60 years
  - Post partum
  - Personal or family history of autoimmune disease
  - Neck surgery
  - Radiation exposure
  - Thyrotoxic drugs (Lithium, amiodarone, interferons, stavudine)

Hypothyroidism

- Psychiatric symptoms include depressed mood, anxiety, cognitive impairment, fatigue, lethargy, weight gain
- Can occasionally present as mania and/or psychosis (myxoedema madness)
- May present with dementia type picture in the elderly
- Improvements after commencing thyroxine emerge after 2 weeks but full effects can take several months

Linking thyroid hormones to mood and cognition

- Thyroid hormone receptors in cerebral cortex, hippocampus, amygdala, olfactory bulb, choroid plexus

- Thyroid hormone alters the sensitivity of 5HT1A autoreceptors and 5HT2 receptors, resulting in a net increase in serotonergic transmission

Hyperthyroidism

- Psychiatric symptoms include anxiety, irritability, psychosis. Patients can also appear inattentive, impulsive and hyperkinetic.

- Patients may be labelled as having panic disorder, generalised anxiety, mood disorders, ADHD, intoxication

- Later life hyperthyroid patients may present with apathy, psychomotor retardation and cognitive impairment

Case

- Josh is 28. He presents with low mood, apathy, fatigue, loss of appetite and resultant weight loss.
- Referrer query – depression? Anorexia?
- On examination he appears malnourished, BP is 95/65 and bloods reveal Na 127, K 5.7 and eosinophilia. He also comments that a scar on his arm has become notably darker.

- Thoughts?

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HPA axis - hypoadrenalism

- Primary adrenal failure - multiple risks (TB, HIV, amyloidosis, Haemochromatosis, adrenoleucodystrophy, Sarcoidosis, metastases, ketoconazole, metyrapone)
- Secondary failure – ACTH deficiency (pituitary disease, exogenous steroid use)
- Am cortisol < 275nmol/L

Hypercortisolaemia

- The following are common (up to 60% of patients)
- Depressed mood \ mood lability
- Poor concentration
- Weight gain
- Fatigue
- Fragmented sleep
- Loss of libido

Treated with steroids and fludrocortisone.

Compliance can be patchy due to side effects

Hypercortisolaemia

- Raised 24h urinary free cortisol level
- Dexamethasone suppression test (positive suppression for pituitary sources – Cushing's DISEASE, non suppression for ectopic sources of ACTH e.g. Adrenal or lung tumour - Cushing's SYNDROME)
- Beware iatrogenic Cushing's (prednisolone, beclomethasone etc) and alcohol induced pseudo-Cushing's syndrome

Case

- Mrs H is 52. She has been referred to discuss treatment for panic attacks. There is a 2 month history of random episodes of feeling panicked, sweaty, racing heartbeat. There is no phobic anticipation of an attack.

- Cardiology referral - investigations unremarkable
- MRI brain - normal

- Thoughts?

Phaeochromocytoma

- Catecholamine releasing tumour of adrenal medulla
- Headache, sweating, palpitations, labile BP, tachycardia
- Tests:
- Plasma and 24h urinary catecholamines and metanephrines
- CT/MRI
- Clonidine Suppression test
- Treatment – beta blockers and surgery

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Case

- Mr J is 42. He presents with low mood and poor concentration, fatigue and appetite loss. He also complains of feeling weak and having non specific, multiple, shifting pains (abdominal, upper and lower limbs). Symptoms have been present for several months.

- FBC, Cre, U+E's, LFT's normal
- Is this depression with somatising features?

Further Investigations

- Abdominal XR – nephrolithiasis

- Bone profile:
- Corrected Ca - 2.96 mmol/L
- Phosphate - 0.47mmol/L

- Serum PTH: 7.2pmol/L

- Acute treatment given – IV saline and a bisphosphonate (pamidronate)

Hyperparathyroidism

- Primary hyperparathyroidism (parathyroid adenoma/hyperplasia) account for 90% of cases. (secondary – response to calcium loss due to renal disease, vitamin D deficiency; tertiary – chronic hyperplasia due to sustained secondary disease)

- Presentation:
- Bones, stones, groans and psychic moans
- Bone/joint pain
- Renal calculi
- Muscle weakness, restless legs
- Depression, apathy, progressing to confusion, catatonia, psychotic symptoms and coma as Ca levels rise

Hypoparathyroidism

- Tetany
- Seizures
- Weakness
- Fatigue
- Cognitive slowing
- Depression
- Anxiety
- Dementia

Note that psychiatric symptoms can precede physical symptoms

Treated with oral or IV calcium and vitamin D

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Case – diagnosed by a core trainee in 2010

- Linda is 58. She has been referred ?depression due to low mood, anxiety and persistent back pain
- She recently had to move into temporary accommodation as a fire broke out in her block of flats .
- Medical history is unremarkable other than reflux. She smokes 20 cigarettes daily. One previous depressive episode requiring crisis team input. She recently retired from a senior administrative post due to her back pain.

- During review, it becomes apparent that Linda has lost 3 stone over the last 6 months and is troubled by nausea and vomiting. The back pain is described as a constant, boring pain that sometimes wakes her at night.

- She denies feeling low in mood but admits it took a while to adapt to moving from her home. Other parallel stressors included her husband being hospitalised after the fire and her mother passing away after a long illness. She feels she has essentially experienced a normal range of emotions to these stressors over the last few months.

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What would you do next?

Advice to referrer

- No current evidence of depressive illness – Linda described a series of normal emotional adjustments to severe stressors
- Concerns regarding nausea, vomiting, weight loss and back pain suggested retroperitoneal disease - ?renal or pancreatic cancer?
- Urgent CT – Pancreatic cancer with widespread metastases

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Pancreatic Cancer

- 95% adenocarcinoma
- Symptoms leading to diagnosis depend on site, size and tissue type. Cholestatic symptoms can sometimes predominate.
- Fourth most common cause of cancer deaths
- Poor prognosis – median survival 6-10 months (5 year survival 3%)
- Depressive symptoms, anxiety, sleep disturbance and pain can predate diagnosis by 12-18 months

Pancreatic Cancer

- Major depressive syndrome in up to 50% patients; appears particularly common compared to other cancers (Massie 2004)
  - Paraneoplastic syndrome? Cytokine release altering serotonergic tone
  - Tumour cells secrete antibodies (5HT blockers)
  - Increased metabolism leads to 5HT depletion

- SMR for suicide up to x10 general population (Hughes 2000, Misono 2008, Turaga 2011)

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Endocrine - Summary

- Hypo and hyperthyroidism
- Hyper and hypo adrenalism
- Hyper and hypoparathyroidism
- Pancreatic cancer

- Further reading – psychiatric sequelae of:
- Growth and sex hormone changes
- hypopituitarism

Case

- Anna is 32. She has no history of mental health problems. She presents to A+E feeling depressed and unsteady on her feet.

- She noticed flu type symptoms and a strange “bullseye” rash cropping up on different parts of her body about 2 weeks after returning from a hiking trip in Connecticut, USA. She returned from this trip 3 months ago.

- Thoughts?

Lyme Disease

- Tick borne spirochete (Borrelia Burgdoferi)
- 3% risk of acquiring Lyme disease per tick bite
- Commoner in USA than Europe
- 1-2000 cases in UK per year
- Early sx (within first month of bite):
  - Erythaema migrans in 2/3 cases
  - Headache
  - Flu type syndrome
  - Arthritis
  - Back pain especially at night

Lyme Disease

- Later:
  - Arthritis and ECG changes (AV block)

  Neuro-Lyme in 15% untreated patients:
  - Meningism, ataxia, myoclonus, paraesthesiae, facial nerve palsy, seizures
  - Memory and concentration difficulties
  - Irritability / violence
  - Depression / mania / anxiety
  - Psychosis

Differential

- MS, Chronic fatigue, fibromyalgia, somatisation
- Affective or psychotic disorder
- Clues :
  - Serology
  - Response to IV ceftriaxone / Cefotaxime

- Current controversy over chronic post infectious state – “post lyme syndrome” (symptoms resembling chronic fatigue syndrome, fibromyalgia, poor concentration, low mood)

Case

- 34 year old woman
- Family history of SLE
- No history of ETOH or drug misuse
- 3d prodrome of headaches, fevers and anxiety.
- Brought to A+E the following day with confusion.
- GTC seizure in A+E.

Case

- Pyrexial (38.7C)
- LP - raised WCC and RBC
- MRI (FLAIR) - bilateral Medial Temporal Lobe intensities
- EEG - inconclusive

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Limbic Encephalitis

- Inflammatory brain disorders involving medial temporal lobe structures
- Memory loss, confusion, irritability, anxiety, psychosis, seizures evolve over days to weeks
- Infective (HSV) and autoimmune (paraneoplastic and non paraneoplastic) subtypes

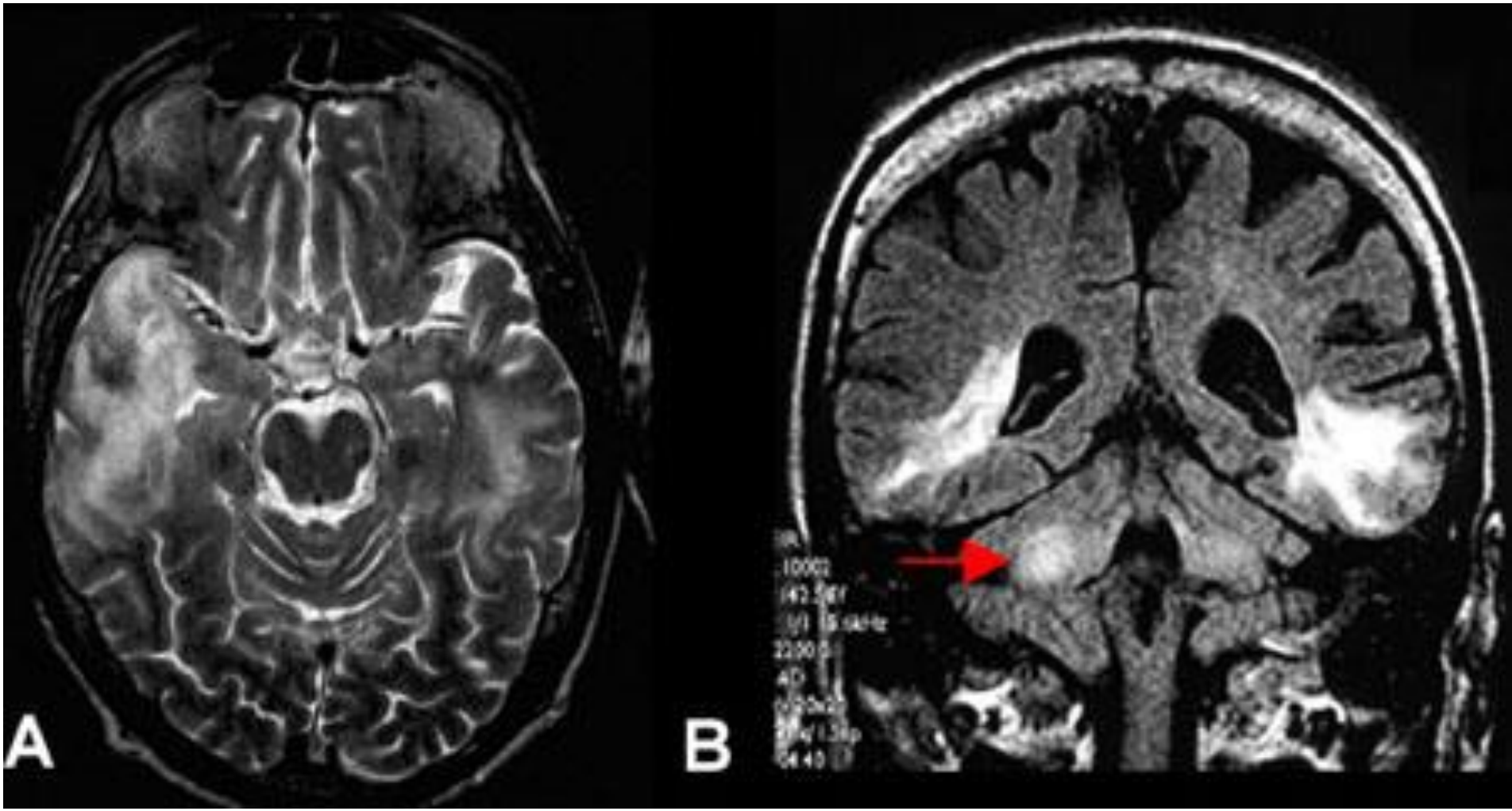
Herpes Simplex Encephalitis

- Incidence 2-4 per million
- Most common fatal viral CNS infection in the West
- 50% over 50 years old
- Mostly HSV-1 in adults (VZV, EBV, CMV, HSV 6/7)
- Flu type prodrome
  - Fever (90%) and Headache (81%)
  - Vomiting (46%)
- “psychiatric problems”(71%) – agitation, confusion, psychosis, word finding problems, memory loss
- Seizures (67%)
- Focal weakness (33%)

Investigations

- MRI abnormalities in 90% of patients
  - FLAIR images show hyperintensities in medial temporal lobes, insular cortex and orbitofrontal cortex (haemorrhage, necrosis and inflammation)
- LP
  - Raised WCC and RBCC
  - Viral PCR positive (highly sensitive and specific) within 3-7d and 5-7d after commencing Acyclovir

- EEG high sensitivity but low specificity. Useful for picking up non convulsive epileptiform activity so it can be treated


A
B

Treatment – don’t delay

- IV acyclovir – 10mg/kg over 1h, administered 8hrly for 14-21d
- Reduces mortality from 70% to 19%
- Consequences of delayed treatment
  - Amnesia most common
  - HSVE is one of the most common causes of Kluver-Bucy syndrome (memory loss, visual agnosia, hypersexuality, hyper-orality, hyperphagia, placidity)

Watch this space

The German trial of Acyclovir and Corticosteroids in Herpes-simplex-virus-Encephalitis (GACHE)

– multicentre, randomized, placebo-controlled trial
– outcomes of treatment with acyclovir vs acyclovir plus dexamethasone.

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Case

- George is 42 and has a history of chronic renal failure (CKD stage 2). He presents to A+E (again) with all over body pains, most severe in his abdomen. He is irritable and verbally abusive and demands to see the queen. He is tachycardic and hyertensive.

- His nephew noted that George's urine is a strange colour and wonders if he is taking illicit drugs. George seemed fine 2 weeks ago but he has these "weird episodes" a few times a year

- Thoughts?

Porphyria – hepatic type

- Inherited (autosomal dominant) or acquired
- Partial deficiency of porphobilinogen deaminase (porphyrins accumulate)
- Change in diet/medication, alcohol, infection may trigger an attack
- Neuropathy, abdominal pain and vomiting, muscle weakness and back pain, tachycardia, hypertension, cardiac arrhythmias
- Anxiety, depression, phobias, psychosis, mania, delirium
- Chronic renal failure is common (persistent hypertension, analgesic nephropathy, and accumulation of nephrotoxic metabolites)
- Increased risk of hepatocellular Ca
- Ix - Urinary porphyrins, porphobilinogen
- Rx - IV glucose and high carb diet, IV haematin

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Questions or Comments?

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MCQs

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MCQs

1. Patients with Phaeochromocytoma may resemble patients experiencing:

    A. Depression
    B. Mania
    C. Psychosis
    D. Panic disorder
    E. OCD

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MCQs

1. Patients with Phaeochromocytoma may resemble patients experiencing:

   A. Depression
   B. Mania
   C. Psychosis
   D. Panic disorder
   E. OCD

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MCQs

2. Which of the following commonly features in early Borrelia infection?

   A. Erythema nodosum
   B. Flu type symptoms
   C. Tinnitus
   D. Polyuria
   E. Abdominal pain, especially at night

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MCQs

2. Which of the following commonly features in early Borrelia infection?

   A. Erythema nodosum
   B. Flu type symptoms
   C. Tinnitus
   D. Polyuria
   E. Abdominal pain, especially at night

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MCQs

3. Which of the following is NOT a risk factor for hypothyroidism?

   A. Age <40 years
   B. Post-partum
   C. Neck surgery
   D. Radiation exposure
   E. Amiodarone

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MCQs

3. Which of the following is NOT a risk factor for hypothyroidism?

   A. Age <40 years
   B. Post-partum
   C. Neck surgery
   D. Radiation exposure
   E. Amiodarone

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MCQs

4. Patients with untreated Borrelia infection progressing to neurological symptoms:

   A. 5%
   B. 10%
   C. 15%
   D. 18%
   E. 20%

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MCQs

4. Patients with untreated Borrelia infection progressing to neurological symptoms:

   A. 5%
   B. 10%
   C. 15%
   D. 18%
   E. 20%

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MCQs

5. HSV encephalitis commonly affects the:

   A. Frontal lobes
   B. Temporal lobes
   C. Parietal lobes
   D. Brainstem
   E. Corpus callosum

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MCQs

5. HSV encephalitis commonly affects the:

   A. Frontal lobes
   B. Temporal lobes
   C. Parietal lobes
   D. Brainstem
   E. Corpus callosum

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Any Questions?

Thank you