Anxiety Disorders in Menopause

A.Arzu Kologlu Akalin MD

Tutor: Genevieve Girardet MD

Brain functions affected during menopause

- Autonomic
  - Gonadotrophins
  - Sleep
  - Vasomotor episodes (hot flushes)
  - Libido
  - Mood
  - Metabolic regulation
- Cognition
- Sensory perception
- Memory
- Voluntary motor function
- Immunologic function
- Sexual function & dysfunction (presumed to be sex steroid related)

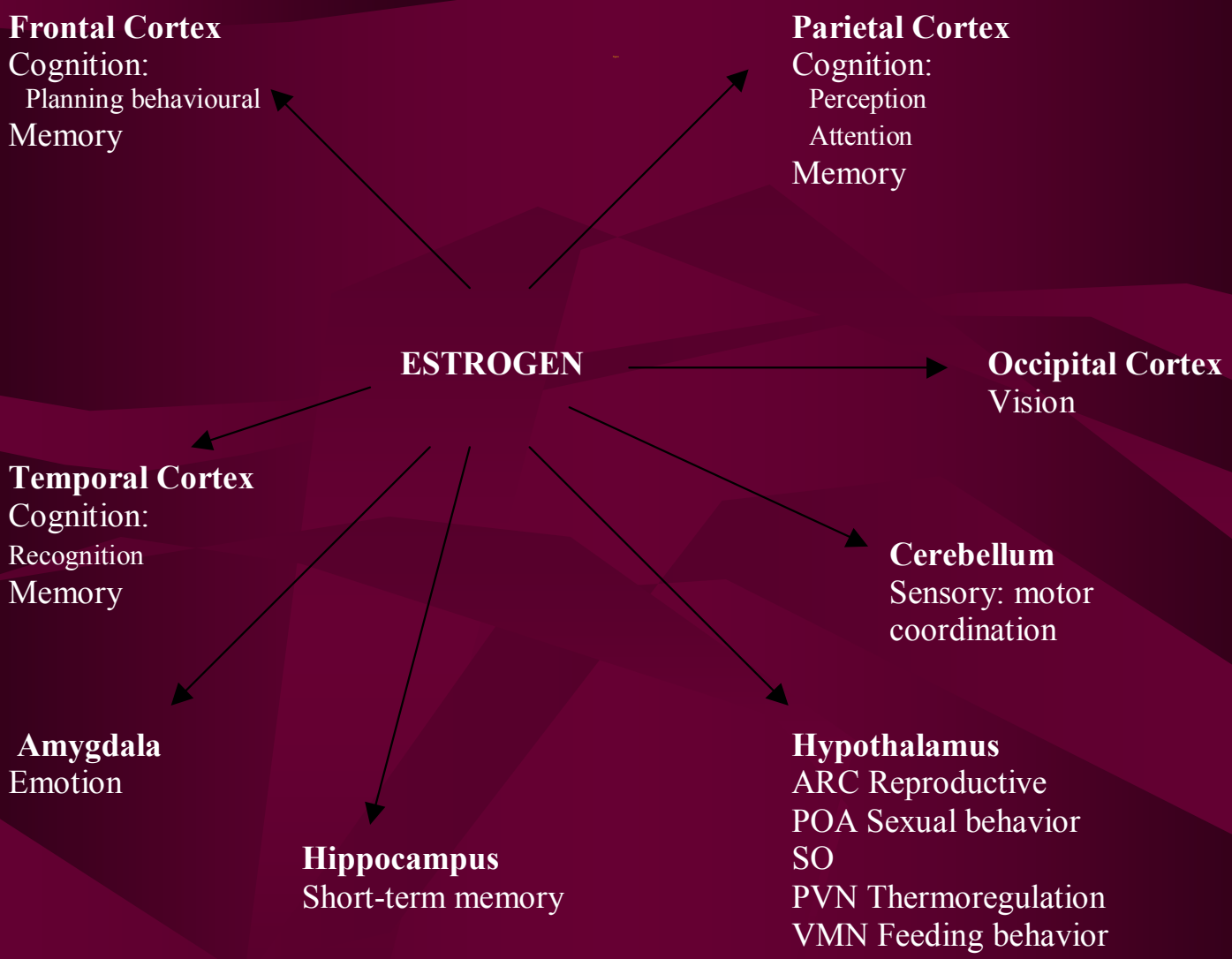
Effects of sex steroids in the brain (1)

Estrogen

- Estrogen affects all brain cells by direct and indirect cellular effects
- affects neurons and glia
- regulates brain blood vessels
- has been shown to influence most brain functions, regulating biochemical and anatomic parameters
- can affect the concentrations of neurotransmitters

Effects of sex steroids in the brain (2)
Progestin

- Has potent anesthetic properties
- predisposes to dysphoric moods


Frontal Cortex
Cognition:
Planning behavioural
Memory
Parietal Cortex
Cognition:
Perception
Attention
Memory
ESTROGEN
Occipital Cortex
Vision
Temporal Cortex
Cognition:
Recognition
Memory
Cerebellum
Sensory: motor
coordination
Amygdala
Emotion
Hippocampus
Short-term memory
Hypothalamus
ARC Reproductive
POA Sexual behavior
SO
PVN Thermoregulation
VMN Feeding behavior

Estrogen, progestin and androgen modulate synthesis, release and metabolism of neurotransmitters such as:

- Noradrenalin
- Dopamin
- Serotonin
- Acethyl choline
- ß-endorphin
- Neuropeptide Y
- Corticotrophin releasing factor
- Gamma-aminobutyric acid
- Gonadotrophin releasing hormone
- Thyrotrophin releasing hormone
- Calcitonin gene-related peptide

Sex steroids may also affect neuronal differentiation and survival through several different local regulatory mechanisms:

- regulation of proteins involved in neuronal survival
- antioxidant effects
- effects on neuronal energy mechanism
- induction of growth factor mediated responses

Anxiety Disorders

- Panic and anxiety disorders (panic disorder and generalised anxiety disorder)
- Phobic disorders (agoraphobia, social phobia, specific phobia)
- Obsessive-compulsive disorder
- Posttraumatic stress disorder

Lifetime prevalence of subgroups of anxiety disorders

Disorder	Lifetime Prevalence Rate		
	Total	Female	Male
Phobias	12.5%		
Specific phobias	11.3%	14.5%	7.8%
Agoraphobia	5.6%	7.9%	3.2%
Social phobia	2.7%	2.9%	2.5%
OCD	2.5%	1.5%*	1.1%*
GAD		3.8%	2.7%
PTSD	1-9.2%	1.3-11.3%	0.5-6%

*1-month prevalence

Biological theories about the etiology of anxiety disorders (1)

Generalised Anxiety Disorder (GAD)

- Catecholamine theory
- Locus coeruleus theory
- Lactate panicogenic metabolic theory
- Carbondioxide hypersensitivity theory
- GABA-benzodiazepine theory

Biological theories about the etiology of anxiety disorders (2)

Panic Disorder

- A surge of plasma epinephrine was found in 50% of cases
- Phenylethylamine or similar endogenous amines may be involved in mood response to social approval or disapproval
- Genetic component

Biological theories about the etiology of anxiety disorders (3)

Obsessive-Compulsive Disorder (OCD)

- Genetic link between OCD and depression and Tourette's syndrome
- Neurologic models: orbitofrontal-limbic-basal ganglia abnormalities
- Biochemical models:
  - Serotonin dysregulation
  - Dopaminergic dysregulation

Biological theories about the etiology of anxiety disorders (4)

Post-traumatic Stress Disorder (PTSD)

- Hyperarousal
- Kindling model
- Numbing model
- Serotonergic dysfunction

Results

- No directly related articles
- Epidemiological Studies have too wide age intervals, which makes them impossible to interprete according our topic

Conclusion

- No sufficient data available to show any relation between anxiety disorders and menopause
- More attention should be payed to the courses and eventual neuropsychic basis of the anxiety disorders.
- Availability of the articles and language limitations have a remarkable negative effect on the quality of a bibliographic review.

Thank you very much for your kind attention.