Biological Treatments for Depression

Psychology 311
Abnormal Psychology

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Many Models

- Depends on the hypothesized cause
- Biological Models
  - Drugs
  - ECT
- Psychodynamic
- Interpersonal Psychotherapy (IPT)
- Humanistic
- Cognitive Behavioral Therapy (CBT)
- Operant

Biological

- Focus is on the levels of NT at the synapse site in the neuron
- Background
  - NT is released
  - Binds to receptors

Remove NT

- Decreased
  - Through degradation
  - By reuptake into presynaptic elements
Degradation

- NT is broken down into non-active molecules
- Example
  - Nor-Epinephrine
  - Broken down by Mono Amine Oxidase
  - Reduces the amount of NT in the synaptic cleft
  - NT moves off receptors due to concentration gradients

Reuptake

- NT is reabsorbed into the presynaptic element by an active transport system.
- Is NT specific – Different systems for different types of NT
- Examples
  - Nor Epinephrine
  - Serotonin
  - Dopamine

Monoamine Oxidase Inhibitors (MAOI’s)

- Block the secretion of MAO
- Result – Increase the levels of NE in the synaptic cleft for longer periods
- Get more firing on the next neuron
- Person becomes more stimulated
- Stops being depressed
- Problem
  - Side effects can kill you
    - Food products
  - Often interacts with other drugs

Reversible Monamine Oxidase Inhibitors (RIMA’s)

- Have fewer side effects than MAOI’s
- Are more selective
- Are safer and influence fewer brain structures than traditional MAOIs

Tricyclics

- Use a different mechanism than MAOIs
- Block the reuptake of NE by the presynaptic element
- Get increased amounts of NE in synaptic cleft and on receptors
- Get more stimulation
- Get more firing in the next neuron
- Depression goes away

Side Effects

- Dry Mouth
  - Lick and smack lips a lot
- Constipation
- Headaches sometimes
Selective Serotonin Reuptake Inhibitors (SSRIs)

- Designed to increase Serotonin levels
- Block reuptake of serotonin into presynaptic elements
- Uses a similar process to the Tricyclics
- Increases Serotonin in the synaptic cleft

Issues with Drug Treatment

- Only 29-46% respond fully to antidepressants
- In many studies, placebo's were shown to be effective
- For those who continued antidepressants 6 months after recovery, 70% lowered their chance of a relapse

Considerations in Prescribing

- What has worked in the past
- What the past history is
- Cost
- Side effects of the medication
- Chances of an overdose and result
- Age – Elderly do not metabolize as fast
  - Takes less medication
- Liver disease
  - Same as elderly

SSRI’s

- Prozac (Fluoxetine)
  - Best selling drug in the world

Problems with Drugs

- Takes 2-6 weeks before changes begin to occur.
  - If person commits suicide – Some say the drug caused the suicide
- Drugs have side effects
- Also develop tolerance to the drug.
  - Creates problems for the psychiatrist to maintain dose.

Patient Status

- If symptoms reappear = relapse
- If symptoms decrease and patient returns to a normal state = Remission
- If in continuous remission for 6 months = recovered
- If symptoms come back = recurrence
- If person has 3 or more episodes keep them on drugs – Maintenance therapy
Electroconvulsive Therapy

Past
- Was used for everything
- Patients given many "Treatments"
  - 150 was common
- Results were mixed
- Clients had major memory loss

Today
- Has made a comeback
- Primarily used in major depression
- Is the best treatment for persons who have not responded to drugs
- May be better than drugs
  - Minimal side effects when done correctly

Procedure
- Give the person a muscle relaxant
- Provide a shock to usually one side of the scalp
- Person experiences a seizure
- Allowed to sleep
- Patient wakes up several hours later
- Is not like you see in the movies
- Very humane

Results
- Often complete recovery after a single round of treatment (3-7 shocks)
- Often person does not relapse
- Have no idea why it works
  - Does increase Norepinephrine levels

Problems
- Today minimal from a medical standpoint
- Still causes major ethical and social discussions