What it is…

• A modality for treating choroidal neovascular membranes (CNVM) and other conditions

Photodynamic Therapy (PDT)
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How was SVL defined in the MPS? As a loss of 6 or more lines from initial presentation
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Three conditions were studied. What were they?
--ARMD
--Ocular histoplasmosis syndrome
--Idiopathic CNVM
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In a nutshell, what were the findings of the MPS?
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- The specific underlying condition responsible for the CNVM occurrence
- Whether the lesion was new, or recurrent
How it works…

- Photosensitizing dye is injected IV.
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Photodynamic Therapy (PDT)

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What drug is used most commonly as the photosensitizing dye?
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What drug is used most commonly as the photosensitizing dye? Verteporfin
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How it works…

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- CNVM stimulated with wavelength of light specific to activate the dye
**How it works…**

- Photosensitizing dye is **injected IV**
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- The dye reacts with O₂ to create [ ] and [ ] free radicals
**How it works…**

- Photosensitizing dye is injected IV
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*What sort of device is used to deliver the light?*

A laser.

So PDT is a laser procedure akin to, say, PRP? Yes and no. They are alike in that both use laser light to produce therapeutic changes in tissue. However, they differ in that they employ very different laser-tissue interactions in order to induce the desired tissue changes—as we’ve seen, PDT employs a photochemical intervention, whereas PRP exploits the ability of a laser to produce intense localized heat (ie, it is a thermal laser).
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Why doesn’t the PDT laser cause thermal damage like an argon (commonly used for PRP) does?

Lasers deliver energy in the form of electromagnetic radiation (ie, light). A laser’s fluence is determined by the size of the area over which the energy is delivered—the smaller the area, the greater the fluence:

\[ \text{Fluence} = \frac{\text{Energy}}{\text{area}} \]

The spot size (ie, area) in PRP is measured in microns, whereas the ‘spot size’ in PDT is measured in centimeters. Thus, for a given amount of energy delivered, the fluence of PRP is orders of magnitude higher than the fluence of PDT.

Tissue changes—as we’ve seen, PDT employs a photochemical intervention, whereas PRP exploits the ability of a laser to produce intense localized heat (ie, it is a thermal laser).
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**Photodynamic Therapy (PDT)**

*Why doesn’t the PDT laser cause thermal damage like an argon (commonly used for PRP) does?*

**Note:** All PDT is of low fluence compared to most other laser procedures. However, there is a procedure called *low- or half-fluence PDT* in which the amount of energy delivered is half of the standard PDT dose (there is some evidence that half-fluence PDT is more effective than full-fluence)

\[
\text{half - Fluence} = \frac{\text{Energy/area}}{2}
\]

The spot size (ie, area) in PRP is measured in microns, whereas the ‘spot size’ in PDT is measured in centimeters. Thus, for a given amount of energy delivered, the fluence of PRP is orders of magnitude higher than the fluence of PDT.

- Tissue changes—*as we’ve seen, PDT employs a photochemical intervention, whereas PRP exploits the ability of a laser to produce intense localized heat* (ie, it is a thermal laser).
Side effects...

- Transient

ocular (two words)
Side effects…

- Transient vision disturbances
Side effects...

- Transient vision disturbances
- Injection-site adverse effects
Side effects…

- Transient *vision disturbances*
- Injection-site adverse effects
  - Rash
  - Extravasation

Photodynamic Therapy (PDT)
**Side effects…**

- Transient vision disturbances
- Injection-site adverse effects
  - Rash
  - Extravasation
- Transient skin photosensitivity
● **Side effects…**

  ● Transient *vision disturbances*
  
  ● Injection-site adverse effects
    
    ● Rash
    
    ● Extravasation
  
  ● Transient skin *photosensitivity*
Side effects...

- Transient vision disturbances
- Injection-site adverse effects
  - Rash
  - Extravasation
- Transient skin photosensitivity
  - Avoid sunlight for a certain amount of time
Side effects…

- Transient vision disturbances
- Injection-site adverse effects
  - Rash
  - Extravasation
- Transient skin photosensitivity
  - Avoid sunlight for 5 days
Side effects...

- Transient vision disturbances
- Injection-site adverse effects
  - Rash
  - Extravasation
- Transient skin photosensitivity
  - Avoid sunlight for 5 days
- Infusion-related
  - surprising but classic (3 words)
Side effects...

- Transient vision disturbances
- Injection-site adverse effects
  - Rash
  - Extravasation
- Transient skin photosensitivity
  - Avoid sunlight for 5 days
- Infusion-related low back pain
Contraindications…

- Pregnancy
- Liver disease
- Porphyria
- Known hypersensitivity
Contraindications…

- Pregnancy
- Liver disease
- Porphyria
- Known hypersensitivity