Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating three words (and their abb.)

(continued) and other conditions

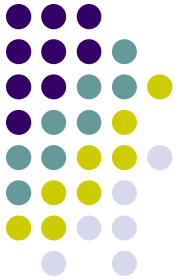
A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM) and other conditions

Q

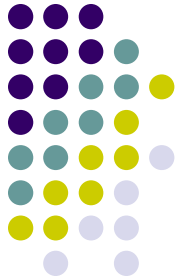
Photodynamic Therapy (PDT)



- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to two words for the treatment of one word CNVM

A

Photodynamic Therapy (PDT)



- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?

A

Photodynamic Therapy (PDT)

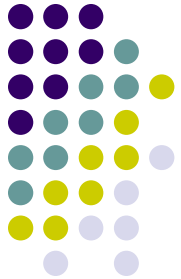
- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

Q

Photodynamic Therapy (PDT)



- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

Did the MPS find one modality to be superior to the other?

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

Did the MPS find one modality to be superior to the other?
No

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

What was the primary endpoint/outcome variable?

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

What was the primary endpoint/outcome variable?
Percent of eyes experiencing severe vision loss (SVL) from baseline

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) and krypton (**red**)

What was the primary endpoint/outcome variable?
Percent of eyes experiencing severe vision loss (SVL) from baseline

How was SVL defined in the MPS?

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) and krypton (**red**)

What was the primary endpoint/outcome variable?
Percent of eyes experiencing severe vision loss (SVL) from baseline

How was SVL defined in the MPS?
As a loss of 6 or more lines from initial presentation

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

What was the primary endpoint/outcome variable?
Percent of eyes experiencing severe vision loss (SVL) from baseline

There were a number of subgroup analyses in the MPS. Important subgroup analyses were based on:
--
--
--

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue**-**green**) and krypton (**red**)

What was the primary endpoint/outcome variable?
Percent of eyes experiencing severe vision loss (SVL) from baseline

There were a number of subgroup analyses in the MPS. Important subgroup analyses were based on:
--Lesion location
--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

How was lesion location defined; ie, in terms of what structure?

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

Four locations were used. What were they?
--
--
--
--

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

Four locations were used. What were they?
--Extrafoveal
--Juxtafoveal
--Subfoveal
--Papillomacular bundle

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

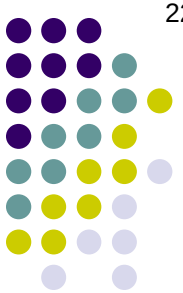
There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

*Four locations were used. What were they? **How were they defined?***
--Extrafoveal:
--Juxtafoveal
--Subfoveal
--Papillomacular bundle

A/Q

Photodynamic Therapy (PDT)



- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

*Four locations were used. What were they? **How were they defined?***
--Extrafoveal: Posterior edge of the CNVM >200 mm from foveal center
--Juxtafoveal:
--Subfoveal
--Papillomacular bundle

A/Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

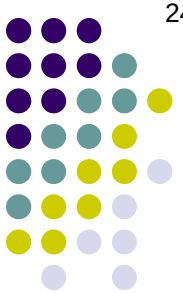
There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

*Four locations were used. What were they? **How were they defined?***
--Extrafoveal: Posterior edge of the CNVM >200 mm from foveal center
--Juxtafoveal: Posterior edge 1-200 mm from foveal center
--Subfoveal:
--Papillomacular bundle

A/Q

Photodynamic Therapy (PDT)



- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

*Four locations were used. What were they? **How were they defined?***
--Extrafoveal: Posterior edge of the CNVM >200 mm from foveal center
--Juxtafoveal: Posterior edge 1-200 mm from foveal center
--Subfoveal: Some portion of the CNVM was directly below the foveal center
--Papillomacular bundle:

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) an

What was the primary
Percent of eyes experi

There were a number
--Lesion location
--The specific underlyi
--Whether the lesion w

How was lesion location defined; ie, in terms of what structure?
With respect to distance from the foveal center

*Four locations were used. What were they? **How were they defined?***
--Extrafoveal: Posterior edge of the CNVM >200 mm from foveal center
--Juxtafoveal: Posterior edge 1-200 mm from foveal center
--Subfoveal: Some portion of the CNVM was directly below the foveal center
--Papillomacular bundle: The CNVM was between the fovea and the ONH

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) and krypton (**red**)

What was the primary er
Percent of eyes experier

Three conditions were studied. What were they?
--
--
--

There were a number of *analyses were based on:*
--Lesion location
--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The Macular Photocoagulation Study (MPS)

What two laser modalities were evaluated?
Argon (**blue-green**) and krypton (**red**)

What was the primary er
Percent of eyes experier

Three conditions were studied. What were they?
--ARMD
--Ocular histoplasmosis syndrome
--Idiopathic CNVM

There were a number of *analyses were based on:*
--Lesion location
--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

Q

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The **Macular Photocoagulation Study (MPS)**

In a nutshell, what were the findings of the MPS?

--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The **Macular Photocoagulation Study (MPS)**

In a nutshell, what were the findings of the MPS?
The basic finding was that treated eyes had a better long-term visual outcome than untreated eyes. Unfortunately, recurrences were commonplace.

--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The **Macular Photocoagulation Study (MPS)**

In a nutshell, what were the findings of the MPS?
The basic finding was that treated eyes had a better long-term visual outcome than untreated eyes. Unfortunately, recurrences were commonplace. Further, where subfoveal lesions were concerned, treatment extracted a terrible toll on vision. Lasing the foveal center produces an immediate, profound (~5 lines) loss of vision. Thus, pts with subfoveal CNVM faced an awful dilemma--get treated and be guaranteed an immediate, significant and permanent loss of vision, *or* decline treatment and enjoy better short-term vision, but at the risk of a poorer long-term visual outcome.

--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

A

Photodynamic Therapy (PDT)

- *What it is…*
  - A modality for treating choroidal neovascular membranes (CNVM)
  - It was developed to be an alternative to thermal laser for the treatment of subfoveal CNVM

What landmark clinical study evaluated the use of thermal laser for the treatment of CNVM?
The **Macular Photocoagulation Study (MPS)**

In a nutshell, what were the findings of the MPS?
The basic finding was that treated eyes had a better long-term visual outcome than untreated eyes. Unfortunately, recurrences were commonplace. Further, where subfoveal lesions were concerned, treatment extracted a terrible toll on vision. Lasing the foveal center produces an immediate, profound (~5 lines) loss of vision. Thus, pts with subfoveal CNVM faced an awful dilemma--get treated and be guaranteed an immediate, significant and permanent loss of vision, *or* decline treatment and enjoy better short-term vision, but at the risk of a poorer long-term visual outcome. Clearly, a better alternative for treating subfoveal CNVM was needed, and PDT fit the bill at the time.

--The specific underlying condition responsible for the CNVM occurrence
--Whether the lesion was new, or recurrent

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is route of introduction

A

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - **Photosensitizing dye** is injected IV

What drug is used most commonly as the photosensitizing dye?

A

Photodynamic Therapy (PDT)

- *How it works…*
  - **Photosensitizing dye** is injected IV

What drug is used most commonly as the photosensitizing dye?
Verteporfin

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - **Photosensitizing dye** is injected IV

What drug is used most commonly as the photosensitizing dye?
Verteporfin

What is the trade name of verteporfin?

A

Photodynamic Therapy (PDT)

- *How it works…*
  - **Photosensitizing dye** is injected IV

What drug is used most commonly as the photosensitizing dye?
Verteporfin

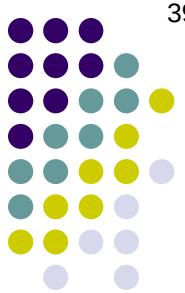
What is the trade name of verteporfin?
Visudyne

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass

Q

Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with [redacted] specific to activate the dye

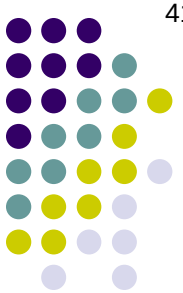
A

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with wavelength of light specific to activate the dye

Q

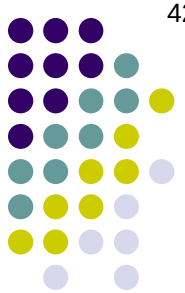
Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with wavelength of light specific to activate the dye
  - The dye reacts with O_2 to create [ ] and [ ] free radicals

A

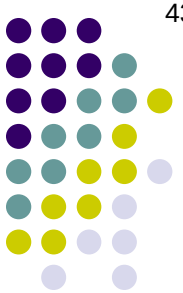
Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with wavelength of light specific to activate the dye
  - The dye reacts with O_2 to create oxygen and hydroxyl free radicals

Q

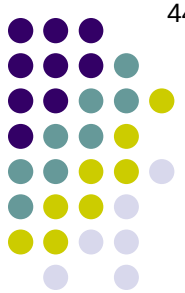
Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with wavelength of light specific to activate the dye
  - The dye reacts with O_2 to create oxygen and hydroxyl free radicals
  - Free radicals → intravascular event → intravascular result

A

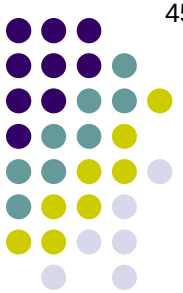
Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM stimulated with wavelength of light specific to activate the dye
  - The dye reacts with O_2 to create oxygen and hydroxyl free radicals
  - Free radicals → massive platelet activation → thrombosis of pathologic vasculature

Q

Photodynamic Therapy (PDT)



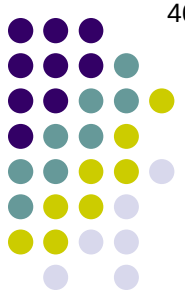
- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM **stimulated with wavelength of light** specific to ac
  - The
  - Free
    thron

What sort of device is used to deliver the light?

oxyl

A

Photodynamic Therapy (PDT)



- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM **stimulated with wavelength of light** specific to ac
  - The
  - Free
    thron

What sort of device is used to deliver the light?
A laser

oxyl
free

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM **stimulated with wavelength of light** specific to ac
  - The
  - Free
    thron

oxyl free

What sort of device is used to deliver the light?
A laser

So PDT is a laser procedure akin to, say, PRP?

A

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to pass
  - CNVM **stimulated with wavelength of light** specific to ac
  - The
  - Free
    thron

oxyl free

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).

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to
  - 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).

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

A

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to
  - 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).

Why doesn't the PDT laser cause thermal damage like an argon (commonly used for PRP) does?
Because the PDT laser is a low fluence laser, whereas argon PRP is high fluence

Q

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the CNVM is allowed to
  -
  -
  - throu

Why doesn't the PDT laser cause thermal damage like an argon (commonly used for PRP) does?
Because the PDT laser is a low fluence laser, whereas argon PRP is high fluence

What does fluence *refer to in this context?*

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).

A

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the

Why doesn't the PDT laser cause thermal damage like an argon (commonly used for PRP) does?
Because the PDT laser is a low fluence laser, whereas argon PRP is high fluence

What does fluence *refer to in this context?*
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:

Fluence = Energy/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).

Photodynamic Therapy (PDT)

- *How it works…*
  - Photosensitizing dye is injected IV
  - Time sufficient to allow concentration of the dye in the
  - greater the fluence.
  - 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).

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.

Q

Photodynamic Therapy (PDT)

- *Side effects…*
  - Transient

ocular (two words)

A

Photodynamic Therapy (PDT)

- *Side effects…*
  - Transient vision disturbances

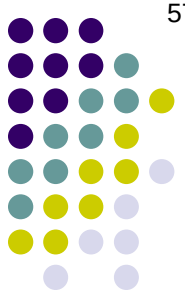
Q

Photodynamic Therapy (PDT)

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

A

Photodynamic Therapy (PDT)



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

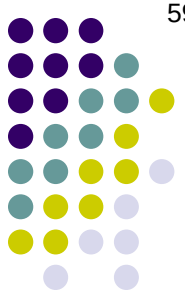
Q

Photodynamic Therapy (PDT)

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

A

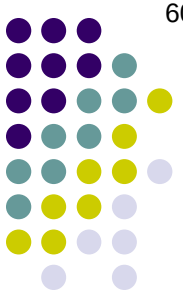
Photodynamic Therapy (PDT)



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

Q

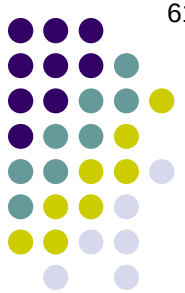
Photodynamic Therapy (PDT)



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

A

Photodynamic Therapy (PDT)



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

Q

Photodynamic Therapy (PDT)

- *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)

A

Photodynamic Therapy (PDT)

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

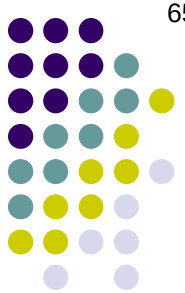
Q

Photodynamic Therapy (PDT)

- *Contraindications…*
  -
  -
  -
  -

A

Photodynamic Therapy (PDT)



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