

## Abstract 30

### MECHANISMS OF STERILE INFLAMMATION AFTER INTRAVITREAL INJECTION OF ANTIANGIOGENIC DRUGS

Oral

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#### **Purpose:**

Intraocular inflammation is an uncommon but potentially vision-threatening adverse event related to anti-VEGF therapy. This is of increasing importance given both the volume of injections performed. Reviewing potential mechanisms and clinical differences of intraocular inflammation may assist clinicians and scientists in reducing the risk of these events in the future.

#### **Methods:**

Literature review on the mechanisms of sterile inflammation after intravitreal injection of different antiangiogenic agents.

#### **Results:**

Two types of inflammation are seen with intravitreal injections, acute onset sterile inflammation and delayed onset inflammatory vasculitis. Acute onset inflammation can be subcategorized into subclinical anterior chamber inflammation and sterile uveitis/endophthalmitis. Subclinical anterior chamber inflammation can occur at rates as high as 19% after intravitreal anti-VEGF injection. Rates of sterile uveitis/endophthalmitis range from 0.05% to 4.4% depending on the anti-VEGF agent. Inflammatory vasculitis is only associated with brolocizumab. In addition, silicone oil from syringes can induce immunogenic protein aggregates. Agitation of the syringe, freeze thawing, shipping and improper storage may increase the amount of silicone oil.

#### **Conclusions:**

Inflammation might be patient-specific, medication-specific and delivery-specific. The majority of clinically significant inflammation seen after intravitreal injection is an acute onset inflammatory response. Avoiding temperature fluctuation, mechanical shock, agitation during transport and handling, and the use of silicone oil-free syringes may help minimize intraocular inflammation.

