

# Needle Size in Intravitreal Injections- Preliminary Results of a Randomized Clinical Trial

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## Abstract

### Purpose:

To evaluate the influence of the needle size used for intravitreal (IVT) injections on patients' pain experience in a randomized, double-armed, single-blinded, single-centered clinical trial.

### Methods:

Patients included were randomized to have an IVT injection performed with a 27-gauge needle (group 1) or with a 30-gauge needle (group 2). The topical anesthesia before the injection was standardized (0.5% tetracaine drops). Immediately after the injection, patients were asked to grade their pain using the visual analogue scale (VAS) and the Wong-Baker FACES scale. The main outcome measure was the pain score assessment. Co-factors analyzed were patients' demographics (age and gender), clinical characteristics (right eye, left eye, number of previous IVT injections) and the surgeon. In addition, scaled surgeon's questionnaires to assess the IVT injection procedure were evaluated. For statistical analysis a regression model was used.

### Results:

Up to now, the data of 126 patients (group 1: 59 patients; group 2: 67 patients) were analyzed. Mean VAS pain scores were  $2.26 \pm 1.35$  for group 1 and  $2.27 \pm 1.66$  for group 2. Mean Wong-Baker pain scores were  $1.95 \pm 1.51$  for group 1 and  $2.22 \pm 1.65$  for group 2. There was no significant difference in the VAS pain scores ( $p > 0.86$ ) and in the Wong Baker pain scores ( $p > 0.36$ ) between both treatment groups. Gender and the number of previous IVT injections significantly influenced the VAS pain scores ( $p < 0.05$ ), whereas age had a significant influence on

injections and older patients had higher pain scores. The surgeon's questionnaire showed an overall preference towards the use of a 30-gauge needle for IVT injections.

**Conclusions:**

The use of a 30-gauge needle for IVT injections showed no significant effect in pain relief compared to the use of a 27-gauge needle. However, a 30-gauge needle was preferred by all surgeons.

**Clinical Trial:**

<http://www.clinicaltrials.gov> NCT01477996

**Keywords:** retina • clinical (human) or epidemiologic studies: treatment/prevention assessment/controlled clinical trials • injection

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