



Safety of Intravitreal Injections in Patients with Thrombocytopenia: A mini-review

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INTRODUCTION

How Low is Too Low?

Intravitreal injections [IVI] are a commonly performed invasive ophthalmological procedure, with 830,687 having been performed in England in the financial year ending 2024¹. Here we evaluate the evidence for managing patients with thrombocytopenia who require anti-VEGF or dexamethasone IVI.

Clinical vignettes

- 1

A 62-year-old patient attended the Macular Treatment clinic for cystoid macular oedema secondary to retinal vein occlusion. He had a history of idiopathic thrombocytopenic purpura (ITP). His platelet count on presentation was 5,000/ μ L. Haematology recommended a threshold of 50,000/ μ L, which the patient reached after three months of Romiplostim treatment.
- 2

A 78-year-old patient attended the Macular Treatment clinic for diabetic macular oedema. He had a history of ITP, and a decision was taken to proceed to dexamethasone injection once the platelet count was over 80,000/ μ L.

METHODOLOGY

A literature search was performed in PubMed using the following search terms: ((IVI) OR (intravitreal dexamethasone)) AND ((thrombocytopenia) OR (platelet transfusion)). The search returned 20 results, of which none were relevant to the review question.

Guidance from international bodies was identified via a Google search of the term “guidelines for the use of platelet transfusions in ophthalmology” which returned the evidence discussed herein. The references section of the publications was used to identify further relevant sources.

References

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3. Palo R, Capraro L, Hanhela R, et al. Platelet transfusions in adult patients with particular reference to patients under-going surgery. Transfus Med 2010;20:30-7
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RESULTS

There is no high-quality evidence to support a specific minimum platelet threshold for safe IVI in thrombocytopenic patients

Systematic Reviews

A 2015 systematic review² of the clinical evidence for platelet transfusion in patients undergoing surgical procedures identified two observational studies. In one study³, all thrombocytopenic patients received platelet transfusion prior to surgery and hence there was no control group to evaluate the effect of platelet transfusion. In the second study⁴, some thrombocytopenic patients received pre-operative platelet transfusion, but the number was not reported, so the clinical impact of platelet threshold on outcomes was not assessable.

A 2025 systematic review and meta-analysis⁵ of the clinical use of platelet transfusions evaluated cardiac surgery alone, and did not assess platelet transfusions in other surgical specialities.

National and International Guidelines

The British Committee for Standards in Haematology guidelines advise consideration of ophthalmic surgery involving the posterior segment when the platelet count is over 100,000/ μ L, and no platelet threshold for cataract surgery in view of the avascular nature of the procedure. These recommendations were based on low-certainty evidence.

The International Collaboration for Transfusion Medicine Guidelines recommend platelet transfusion below 50,000/ μ L for non-neuraxial surgery, with no specific guidance for ophthalmic surgery. The recommendation was based on very low-certainty evidence.

Peer-reviewed Journal Articles

A retrospective study⁶ of 150 thrombocytopenic patients undergoing clear corneal cataract surgery identified no complications of bleeding from anaesthetic injections, no hyphaema, and no suprachoroidal haemorrhage. The median pre-operative platelet level was 76,000/ μ L, range 17–100,000/ μ L.

RECOMMENDATION

Low platelet threshold of 50 for anti-VEGF and 80 for Ozurdex

Local Protocol

We employ a minimum platelet threshold of 50,000/ μ L for patients undergoing IVI of anti-VEGF, and of 80,000/ μ L for patients undergoing IVI of dexamethasone. This is due to the calibre of the needle used for intravitreal anti-VEGF being finer bore (30G) than for intravitreal dexamethasone (22G).



Figure 1. Risks must be balanced for each patient

Patients with known thrombocytopenia are asked to check their platelet level at the start of the week of their Macular clinic appointment. If platelets are <50,000/ μ L we liaise with Haematology to consider a same-day platelet transfusion. After transfusion, the patient must attend the Macular clinic for same-day IVI treatment.

Please note that there are risks with platelet transfusion⁷. We seek Haematology advice for each patient because some thrombocytopenic conditions do not respond to platelet transfusion and require alternative specialist management.

CONCLUSION

This study highlights a clinical need for guidance relating to the minimum platelet threshold for IVI from relevant bodies such as the Royal College of Ophthalmologists or the British and Eire Association of Medical Retina Specialists (BEAMS).

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7. <https://b-s-h.org.uk/media/20677/bsh-platelet-transfusion-guidelines-summary-2021.pdf>