**Effect of oral tranexamic acid for macular edema associated with retinal vein occlusion or diabetes**

Masayuki Takeyama1\*, Fumio Takeuchi2, Keijiro Sugita1, Masahiro Zako3, Masayoshi Iwaki4, Motohiro Kamei1

1. Department of Ophthalmology, Aichi Medical University, Nagakute, Aichi 480-1195, Japan

2. Department of Biochemistry, Aichi Medical University, Nagakute, Aichi 480-1195, Japan

3. Department of Ophthalmology, Asai Hospital, Seto, Aichi 489-0866, Japan

4. Department of Ophthalmology, Yokkaichi, Digestive Disease Center, Komono, Mie 510-1232, Japan

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\*Correspondence to: Masayuki Takeyama

Tel.: +81 56162 3311; Fax: +81 56163 7255

E-mail: [mtakeyam@aichi-med-u.ac.jp](mailto:mtakeyam@aichi-med-u.ac.jp)

**ABSTRACT**

*Purpose:* Tranexamic acid (TXA) is a widely used plasmin inhibitor that can also cause a decrease in vascular permeability. We hypothesized that TXA could improve macular edema that has originated from an increase in retinal vascular permeability. The aim of this study was to evaluate the efficacy of oral TXA for macular edema associated with retinal vein occlusion (RVO) or diabetic macular edema (DME).

*Methods:* Oral TXA (1,500 mg per day for 2 weeks) was administrated to patients with persistent macular edema secondary to RVO (seven eyes) and DME (seven eyes). After 2 weeks (i.e., the final day of administration) and 6 weeks (i.e., 4 weeks after finishing administration), best corrected visual acuity (BCVA) and central macular thickness (CMT) were measured and compared with baseline. Analyses were performed for RVO, DME and total cases, respectively.

*Results:* In RVO cases, significant improvement in CMT was found between measurements taken at baseline (467.7 ± 121.4 m) and 2 weeks after treatment (428.7 ± 110.5 m, p = 0.031). There was no significant change in CMT between measurements taken at baseline and 6 weeks after treatment. In DME cases, there was no significant change in CMT between measurements taken at baseline and 2 or 6 weeks after treatment. In total cases, compared with baseline CMT (509.5 ± 145.7 m), significant decreases were found at 2 weeks (466.8 ± 133.3 m, p = 0.006) and 6 weeks (472.6 ± 137.3 m, p = 0.028) after treatment. In all analyses of BCVA, no significant change was observed.

*Conclusions:* The results support the hypothesis that plasmin plays a role in the development of macular edema and oral TXA administration may be useful as an adjuvant treatment when combined with other agents such as anti-vascular endothelial growth factor.

**Key words**

diabetic macular edema, fibrin, macular edema, plasmin, retinal vein occlusion, tranexamic acid