

The investigators used central corneal neovascularization as an outcome measure while ignoring the assessment of peripheral corneal neovascularization in the analysis, which is an important parameter for success of any future corneal transplantation that the patient may require. It would be interesting to know the impact of AMT on peripheral corneal neovascularization.

Previous studies reported a beneficial role of AMT in symptomatic relief in patients with chemical injury.³ However, the investigators did not assess subjective scores (eg, pain) in this study, which they highlighted as a limitation of their study. Therefore, are they justified in concluding that AMT is not useful in these cases and would they recommend AMT if its use results in symptomatic improvement?

PRANITA SAHAY

SIDDHI GOEL

PRAFULLA K. MAHARANA

NAMRATA SHARMA

New Delhi, India

ACKNOWLEDGMENT

THE AUTHORS INDICATE NO FINANCIAL SUPPORT OR financial conflict of interest.

REFERENCES

1. Eslani M, Baradaran-Rafii A, Cheung AY, et al. Amniotic membrane transplantation in acute severe ocular chemical injury: a randomized clinical trial. *Am J Ophthalmol* 2019;199:209–215.
 2. Dua HS, King AJ, Joseph A. A new classification of ocular surface burns. *Br J Ophthalmol* 2001;85(11):1379–1383.
 3. Tamhane A, Vajpayee Rasik B, Biswas NR, et al. Evaluation of amniotic membrane transplantation as an adjunct to medical therapy as compared with medical therapy alone in acute ocular burns. *Ophthalmology* 2005;112(11):1963–1969.
-

Amniotic Membrane Transplantation in Acute Severe Ocular Chemical Injury: A Randomized Clinical Trial



WE THANK SAHAY AND ASSOCIATES FOR THEIR INTEREST IN our recently published article.

We chose the Roper-Hall system for patient recruitment because of its simplicity and practicality. Considering the incidence of severe chemical injury, it is hard to recruit enough patients with severe chemical injury, who are categorized based on Dua's system, to reach an 80% statistical power for detection of a meaningful difference of corneal epithelial healing (our primary outcome measure).¹ Most similar studies used the Roper-Hall system; thus, using this system allowed us to draw comparisons to these studies

in the literature. In our study, all patients had >9 clock hours of limbal involvement, which is categorized as Dua's grades 5 and 6.

Most studies in support of amniotic membrane transplantation (AMT) in severe cases of acute chemical injury are nonrandomized or noncomparative case series. However, as we demonstrated in this trial, which was in line with other clinical trials (Table 4),¹ AMT did not have any added benefits to standard medical therapy in these patients.

We used 2 layers of amniotic membrane (AM); the first layer covered the entire cornea and the second was fixated to the entire ocular surface to decrease inflammation and symblepharon formation. Although the AM spontaneously sloughed off in most cases, there were remnants of AM from the superficial layer in a few cases after 3 weeks. Because of the therapeutic effects of AM have already been delivered to the ocular surface, the remnants are more of a foreign body at this point and need to be removed manually to prevent inducing extra inflammation.

We chose the central 5-mm of corneal neovascularization (NV) as a secondary outcome measure. It is well-known that all patients with severe chemical injury will develop peripheral corneal NV,^{2,4} as all of our cases did. Therefore, measuring peripheral corneal NV would not be as valuable or accurate an outcome measure to compare in a randomized clinical trial.

The results of other studies are not conclusive on the effect of AMT for the subjective symptomatic relief in patients with severe chemical injury. We did not specifically include any subjective measures in our trial, as was discussed in our Limitations section. Although our study and other trials provided evidence on the lack of added benefits of AMT to medical therapy in terms of epithelial healing, visual acuity, and corneal NV in patients with severe chemical injury, perhaps future trials may shed more light on other outcome measures (eg, pain).

MEDI ESLANI

Cincinnati, Ohio

ALIREZA BARADARAN-RAFII

Tehran, Iran

ALBERT Y. CHEUNG

Norfolk, Virginia

ALI R. DJALILIAN

Chicago, Illinois

EDWARD J. HOLLAND

Cincinnati, Ohio

REFERENCES

1. Eslani M, Baradaran-Rafii A, Cheung AY, et al. Amniotic membrane transplantation in acute severe ocular chemical injury: a randomized clinical trial. *Am J Ophthalmol* 2019; 199:209–215.
2. Roshandel D, Eslani M, Baradaran-Rafii A, et al. Current and emerging therapies for corneal neovascularization. *Ocul Surf* 2018;16(4):398–414.