

ABSTRACT
THE EFFECT OF PLATELET RICH FIBRIN LYSATE ON EXPRESSION
IN LIMBAL STEM CELL CULTURE EXPOSED TO SODIUM
HYDROXIDE:

IN VITRO EXPERIMENTAL LABORATORY STUDY

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Aim: to evaluate the effect of platelet rich fibrin lysate treatment on the level of BrdU incorporated cells in limbal stem cell culture exposed to alkalic trauma by sodium hydroxide.

Method: Rabbit limbal stem cell culture exposed with 20 μ L NaOH 0,00625M were treated with 5% and 10% platelet rich fibrin lysate (PRF) with control group containing only growth medium. The total expression of BrdU were calculated at 24, 48, 72 hours by DAB staining with immunocytochemistry imaging. Data was taken with *Image J software*.

Result: Statistically there were significant difference in BrdU positive cells between control and both 5% (group II) and 10% (group III) PRF treatment groups and at 24 hours post treatment ($p=0,00$; $p=0,00$, respectively). At 48 hours the same trend continued with $p=0,01$ and $p=0,01$ respectively. Subsequently at 72 hours the difference remained significant ($p=0,001$; $p=0,001$). In addition, there was significant difference between treatment groups only at 48 hours.

Conclusion: PRF lysate increased the total population of limbal stem cells in the limbal stem cell deficiency induced by sodium hydroxide model culture indicated by the amount expression of BrdU presented. There was a difference of BrdU expression at 5% PRF with 10% PRF at 48 h. Therefore, PRF might be beneficial in the search of clinical treatment of limbal stem cells deficiency.

Keyword: platelet rich fibrin lysate, limbal stem cells deficiency, Bromodeoxyuridin, sodium hydroxide