ABSTRACT

This study was aimed to determine the potency of erytropoeitin as angiogenesis inducer in ischemic stroke rats model. Animal model was induced by right unilateral commond carotid artery occlusion (rUCCAO) for 90 minute. The parameter of the stroke model was indicated by decreasing cognitive and motor function and also infarct area in brain. Animals were devided into 5 groups: sham, stroke model, stroke model with rHuEPO 1000 IU, 5000 IU, and 10.000 IU. rHuEPO was administered for 7 days starting at 24 hours after stroke induction. Cognitive and motor function were measured before and after rUCCAO at 1, 3 and 7 days. Animals were sacrificed after 2 weeks to evaluated infarct area in brain by used hematoxyllin eosin staining and to evaluated expression of VEGF used anti-VEGF. The result showed rHuEPO significant difference improved cognitive function on 3 and 7 days ($p = 0,0384$), improved motor function on 7 day ($p < 0,0260$), reduced infarct area ($p = 0,0004$) furthermore rHuEPO significant difference on VEGF expression ($p = 0,0001$) in each groups. We can concluded rHuEPO could prevent cell death by reducing cell damage and also reduced infarct area and rHuEPO could induce angiogenesis by increasing VEGF expression so that rHuEPO could improve cognitif and motor function in ischemic stroke with rUCCAO model.

Key words: rHuEPO, Ischemic stroke, Angiogenesis, VEGF.