The aim of this study was to determine platinum (Pt) and etoposide concentrations and area under the concentration versus timecurve (AUC) of the vitreous humor after periocular or transcorneal intravitreal administration of carboplatin in rabbits and to characterize the extent of toxicity of local carboplatin administration. New Zealand White male rabbits were treated with: a single periocular injection of 15 mg of carboplatin (group I, n=6), a single periocular injection of 30 mg of carboplatin (group II, n=6), a single transcorneal intravitreal injection of 0.05 mg of carboplatin (group III, n=6) and then repeated injections of 0.05 mg (group IV, n=6) and 0.008 mg (group V, n=6). Periocular injections of 2.5 mg (group VI, n=6) and intravitreal injections of 0.5 mg (group VII, n=6) of etoposide were administered in the same way. Vitreous sampling under dissociative anaesthesia were performed at 1 h, 2 h, 6 h, in 1, 2 and 7 days and in 2 (groups I, III, VI and VII) or 3 (group II) weeks. Carboplatin and etoposide concentrations in vitreous and plasma samples were assessed. Clinical and histological evidence of toxicity was graded as four grades. Periocular administration fails to achieve therapeutic levels of chemotherapeutics in the vitreous of rabbits. We found therapeutic levels in the vitreous by intravitreal administration.