TYPE OF DIABETES – A FACTOR DETERMINING THE RESULTS OF INTRAVITREAL BEVACIZUMAB INJECTIONS IN CASE OF DIABETIC RETINOPATHY

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Introduction.

Diabetes mellitus is a growing health issue in modern society. In Latvia the prevalence in 2017 was 4734/100'000. Of these patients 5,5% had retinopathy, 3,2% - maculopathy, and 0,2% were legally blind[1]**.** It is important to know the factors and their force of affecting the therapeutic effect of intravitreal (IVT) Bevacizumab injections as they are a frequently used therapy in case of macular oedema and diabetic retinopathy.

Aim.

The aim of the study is to evaluate diabetes type and therapy influence on visual acuity (VA) and intraocular pressure (IOP) changes before and after IVT injections of Bevacizumab.

Materials and Methods.

The retrospective study was conducted in Pauls Stradins Clinical University Hospitals Ophthalmology clinic in 2018. 120 ambulatory patient cards, VA (Early Treatment of Diabetic Retinopathy Study visual acuity chart) and IOP (iCare) changes were gathered and the type of diabetes and recieved diabetes therapy was registered. Patients who had other forms of retinopathy (for example Age related Macular Degeneration) were excluded. The obtained data were analysed using the statistical software IBM SPSS Statistics version 22.0. and Microsoft Excel.

Results.

In the study participated 15 patients with type I diabetes and 105 with type II diabetes. A statistically significant difference was found in VA before (type I - Mdn=0,4 with IQR[0,20 to 0,60] vs type II – Mdn=0,2 with IQR[0,10 to 0,30])($p<0,01$), VA at the end of therapy (type I – Mdn=0,5 with IQR[0,40 to 0,80] vs type II – Mdn=0,2 with IQR[0,10 to 0,40]) ($p<0,01$) and IOP at the end (type I – Mdn=16 with IQR[14 to 20] vs type II – Mdn=15 with IQR[12 to 17])($p<0,05$).

There were 74 patients who were recieving insulin therapy and 46 who were not. An important difference was found also in patients who were (yes) and were not (no) recieving insulin therapy in IOP at the end (yes Mdn=15 with IQR[13 to 18] vs no Mdn=13,5 with IQR[11 to 16])($p<0,05$), VA at the end (yes Mdn=0,31 with IQR[0,19 to 0,5] vs no Mdn=0,16 with IQR[0,09 to 0,33])($p<0,05$), the IOP difference from beginning to the end of therapy (yes Mdn=0 with IQR[-2 to 2] vs no Mdn=-2 with IQR[-4 to 0])($p<0,01$).

Conclusions.

The type of diabetes is an important factor influencing the outcome of IVT Bevacizumab injections in case of diabetic retinopathy. The VA was significantly better before and after therapy in type I diabetes group, the IOP was lower in type II group. The IOP and VA at the end was higher in insuling recieving group. This might be due to a higher level of blood glucose level control or a younger patient age which might be an interesting topic for another research. IOP difference was greater in non insulin recieving group. It would be interesting to continue a research like this to determine if there are any other mixing factors that were not taken into consideration this time, for example, other eye diseases, refraction errors etc.

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[1] Slimību profilakses un kontroles centrs. *Statistikas dati par cukura diabēta pacientiem.* Table 1 and Table 11.