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Growth factors in platelet rich plasma can regenerate pancreatic beta cells in type 2 diabetes

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Introduction: 387 million people are considered to have diabetes all over the world, and the number is expected to increase miserably to 592 million by 2035. Alternative ways to create β-cells from endogenous sources should be found as a way for the evolution of treatment. This is to bypass the complication of tissue matching and surgical procedures. To date several rebuilding approaches have been developed to stimulate β-cells regeneration through the induction of the proliferation of remaining β-cells, neo-genesis; de novo islet formation from pancreatic progenitor cells, and transdifferentiation; converting non-β-cells within the pancreas to β-cells. Prp contains various growth factors which can be used for tissue regeneration including pancreatic beta cells.

Materials and methods: 2 groups of type II diabetes patients had been monitored in a private clinic, number 40 each group, with 30 females and 50 males. The first group patient's received oral hypoglycaemic drugs as usual but injected by prp weekly by subcutaneous injection of 3ml, the second group received oral drugs only.

Results: There were significant increases in C peptide levels in patients with PRP injection with dpp4 inhibitors and metformin for 3 months with p-value less than 0.0001. In the second group patients on oral therapy only there were no significant change in c peptide levels after 3 months of oral hypoglycaemic drugs.

Conclusion: As Growth factors (GFs) are considered as a natural biological mediators which control growth, differentiation, and have a role in the process of tissue reform and regeneration. The growth factors in platelet-rich plasma can induce beta cell regeneration and increase beta cell mass by stimulating β-cell neogenesis and through ductal cell differentiation into β-cells which is detected by an increase in c peptide levels which may add to type 2 diabetes treatment.

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