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The efficacy of platelet gel derived from umbilical cord blood on diabetic foot ulcers: A double blind randomized clinical trial

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Introduction: Type 2 diabetes is one of the most prevalent disease thorough the world. The foot ulcers are severe complications of this disease. Foot ulcers induce high rate of morbidity, impair quality of life and brings about extreme costs to health service providers and give rise to waste of time. Recently, platelet-rich plasma (PRP) and platelet gel (PG) have been used for the treatment of chronic wounds. In the present randomized, double blind, placebo-controlled study, platelet gel derived from umbilical cord blood (UCB) was used to heal the diabetic foot.

Method: The patients were randomly divided into three groups, under the categories of platelet gel (PG), poor platelet plasma (PPP) and lubricant gel (placebo) (ratio 1:1:1). The processes of gels application were launched for the subject of each group twice per week with three to four day interval. This mechanism protracted for eight weeks. After completion of eight weeks, the patients were followed up after two weeks and then continued for nine months with one month interval.

Result: 30 patients underwent statistical analysis. Except for diastolic blood pressure which was significant between groups, there were no statistically significant differences in patients' baseline demographics. No significant differences were detected between groups at baseline of wounds (P=0.09). The results revealed that there is no statistically significant interaction among three groups within the scope of follow up time.

Conclusion: The presented study provides evidence that there are no significant differences in the size of wound among placebo, PPP, and PG group.

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Arterial stiffness parameters in various obesity phenotypes: Metabolically healthy obese individuals, but are they really?

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Objective: Not all obese individuals demonstrate similar metabolic profiles. The present study was designed to investigate an association between various obesity phenotypes and vascular atherosclerotic changes.

Methods: The 246 study participants were divided into three groups according to presence of obesity and metabolic syndrome (MS): Group one included 91 non-obese subjects without MS; group two included 64 obese subjects without MS and; group three consisted 91 obese subjects with MS. Augmentation index (AI) was performed using SphygmoCor (version 7.1, AtCor Medical, Sydney, Australia).

Results: AI differed significantly between groups; such that AI increased from group one to group three in a continuous fashion. The metabolically benign obese subjects had significantly higher AI than the metabolically benign non-obese one (p=0.016). Combination of obesity and MS was associated with further deterioration in terms of AI (p<0.0001). In univariate GLM analysis, significant by-group differences in AI persisted even after adjustment for age, sex and mean blood pressure.

Conclusions: Metabolically benign obese individuals show an increased arterial stiffness compared to non-obese subjects, despite a comparable cardio metabolic risk profile. Obesity is associated with an adverse effect on blood vessels, independently of age, sex, blood pressure, parameters of glucose homeostasis and lipids.

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