Platelet-rich plasma for facial rejuvenation, a systematic review

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ABSTRACT

The use of platelet-rich plasma is becoming popularised as a treatment for the aging face. In an attempt to assess the quality of evidence supporting this treatment for facial rejuvenation, a systematic review of randomised controlled trials was conducted. All trials were included until February 2016. The review failed to identify any clinical studies meeting the inclusion criteria. The efficacy, short and long-term safety of platelet-rich plasma for facial rejuvenation has not been demonstrated. The appropriateness of delivering these treatments in the absence of these data is questionable.

Keywords: platelet-rich plasma; PRP; facial rejuvenation; systematic review

INTRODUCTION

Platelet-rich plasma (PRP) is derived from centrifuging whole blood drawn from the patient. The resulting solution contains a platelet-rich fraction with a higher platelet concentration than that of the original whole blood. The preparation process yields a number of growth factors such as: transforming growth factor-β (TGF-β), platelet-derived growth factor (PDGF), insulin-like growth factor (IGF-I, IGF-II), fibroblast growth factor (FGF), epidermal growth factor, vascular endothelial growth factor (VEGF) and endothelial cell growth factor which are responsible for enhancing tissue recovery.

As an intervention for subjects seeking facial rejuvenation, PRP might work by delivering these growth factors to the site of injured skin where they are expected to enhance tissue regeneration and improve angiogenesis.

Cochrane reviews found that: there were insufficient evidence to support the use of PRP for treating musculoskeletal soft tissue injuries and no evidence to suggest that PRP is of value in treating chronic wounds.

METHODOLOGY

A systematic review was conducted in Cochrane library, PubMed and ResearchGate to include studies until 19th February 2016. The search criteria involved collecting: all randomised controlled trials using PRP as an intention in subjects needing rejuvenation of their face where the comparator was any other treatment. The search criteria used are listed (Table 1).

RESULTS

The searches failed to identify any studies meeting the criteria (Figure 1).

DISCUSSION

The results of this systematic review demonstrate the complete lack of data assessing the use of PRP for facial rejuvenation. There may be a number of reasons for this. Firstly, PRP is neither a prescription only medicine nor a medical device, it is merely the result of a process. As such, its administration falls outside the jurisdiction of any of the traditional regulatory bodies in medicine. Consequently, there has not been a requirement for interested parties to generate what would be considered basic data on efficacy and safety to enable its use.

It can be seen therefore, the use of PRP in the face may have simply been propagated on the basis of clinical opinion and promotion on the part commercial organisations manufacturing the materials necessary for the process. Though the preparation process has been described in a degree of detail, the
The exact manner in which PRP is to be administered to the face has not. Products need to be tested in conjunction with their method of administration to ensure the properties of the product remain preserved once delivered and whether the delivery mechanism is appropriate to achieve the aim. The central tenet of medicine is primum non nocere, first do no harm. Perhaps of greater concern than the absence of any data supporting any benefit of PRP for facial rejuvenation is the absence of any short, medium and long term safety data. There is simply no appreciation of the effects of the administration of growth factors to the face. Questions must be raised as to whether use of PRP for this indication is appropriate until such data is available.

Given the level of interest in the use of PRP for facial rejuvenation, the execution of a simple randomized controlled trial of PRP versus placebo, with an appropriate delivery method should be possible. Investigators should ensure both objective and subject endpoints are used in assessment and an appropriate safety surveillance or follow up program is implemented.
CONFLICT OF INTEREST STATEMENT

The author has received research funding from Merz Pharma in relation to other studies.

REFERENCES


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