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Letter to the Editor

Is platelet gel safe enough for neutropenic patients?

Dear Editor,

Significant clinical advances have recently been made in the field of regenerative medicine, involving the development of haemocomponents for non-transfusional use. These products include: *i)* platelet-rich plasma (PRP), *ii)* platelet-poor plasma (PPP), *iii)* platelet gel (PG), *iv)* platelet-rich fibrin (PRF), *v)* serum eye drops (E-S) and *vi)* PRP eye drops (E- PRP) [1,2]. All of these products are rich in growth factors (VEGF, PDGF, TGF-β1 and other) and facilitate tissue regeneration *in vivo* by potentiating the activity of resident mesenchymal stromal cells [3]. PG has become very popular for the treatment of skin ulcers, radiodermitis and other conditions [4–6]. Interestingly, Rebulla P et al have demonstrated that PG can be obtained from cord blood. The use of this substance has been proven to be very efficacious for tissue regeneration [7]. In accordance with these findings, our group recently described a case of life-threatening oral mucositis (OM) following high-dose conditioning chemotherapy for peripheral blood stem cell transplantation (PBSCT), which was successfully treated with cord blood platelet gel (CBPG) [8]. Furthermore, Bonfili P and colleagues showed a statistically significant improvement of OM with PG in patients treated with chemo- and radio-therapy (RT) [9]. Chemotherapy consisted of 2 to 3 cycles of cisplatin (100 mg/m^2) on days 1, 22 and 43 or weekly intravenous cisplatin (40 mg/m^2). RT was given according to a 3D-model, ranging from 50 to 54 Gy in 25–27 fractions, up to 70 Gy to 35 fractions. These patients had some degree of neutropenia and OM at the time when PG was administered. Neutropenia was defined as an absolute neutrophil count (ANC) < 1.5 cells x 10^9/L, while severe neutropenia as an ANC < 0.5 cells x 10^9/L or an ANC that is expected to decrease < 0.5 cells x 10^9/L over the next 48 h [10]. Independently from the degree of neutropenia, Bonfili P et al did not report any infective complications in their study group. Thus, it is very unlikely that PG serves as a *pabulum* for bacterial growth. Moreover, after local oral treatment of OM, most of the PG would be either spitted out or swallowed by patients.

In addition to these findings, PG displays clear anti-inflammatory and analgesic properties [11–13] as well as anti-bacterial effects against some microorganisms [3,7]. PG has strong efficacy in curing several kinds of diabetic foot ulcers [14,15]. Moreover, PG is kept frozen (at −80 °C) until use, thus minimizing any risk of bacterial contamination.

In summary, PG has so far proven to be efficacious in the treatment of mucositis following chemo- and/or radiotherapy even in neutropenic patients, without adding any additional infectious risk. Therefore, randomized studies on the use of PG in neutropenic patients are now indicated.

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