Reviewer's report

Title: Influence of osteogenic stimulation and VEGF treatment on in vivo bone formation in hMSC seeded cancellous bone scaffolds

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Reviewer: SATISH TOTEY

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Manuscript entitled “Influence of osteogenic stimulation and VEGF treatment on in vivo bone formation in hMSC seeded cancellous bone scaffolds” by Lenze et al investigated the influence of osteogenic stimulation and treatment with VEGF on new bone formation and neovascularization in hMSC loaded cancellous bone scaffolds in vivo. Results suggest that osteogenic stimulation and treatment with VEGF does not have any influence on the new bone formation and neovascularization in hMSC seeded cancellous bone scaffolds.

One problem is that countless similar studies exist in the literature with partially contradictory, partially similar results, but they cannot be really compared. However, results are quite surprising and not at all novel. Major reason may be shorter half-life of VEGF. This approach seems do not very successful for any defect.

Authors used human mesenchymal stem cells but not mentioned the source. It was demonstrated that adipose derived MSC secrete large amount of VEGF almost 4000-8000 pg/ml. Has authors tried to estimated VEGF released from these hMSC?

Many approaches are now successfully using by co-culturing endothelial cells along with hMSC. This approach was found to be quite successful and demonstrated excellent Neoangiogenesis. This approach is now analysing under clinical trials.

Authors used single dose of 0.8 µg human VEGF and cultured hMSC for one day. Perhaps 0.8 µg VEGF may not be sufficient to cause Neoangiogenesis or may be very high to inhibit Neoangiogenesis. It would have been better to use different concentration to check the correct dose. Sustained release would have been another approach.

Figure-7 depicts quantitative PCR in the text but showed cell number.

Paper is not novel and perhaps may not add any value to readers.

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: No competing interest