Is Salvaged Blood Transfusion Appropriate in Metastatic Spine Tumour Surgery?

Vijayaraghavan.G; Jonathan J H Tan; Hwee Weng Dennis Hey;Gabriel Liu;Naresh Kumar
National University Hospital, Singapore

Objective

Salvaged blood transfusion has not found wide application in metastatic spine tumour surgery (MSTS) due to the theoretical concern of reinfusing tumour cells resulting in tumour dissemination; despite its routine use in spinal surgeries for degenerative conditions and deformity. We have previously reported our laboratory studies on the safety of the blood salvaged during MSTS. Spine surgeons, however, remain reluctant to employ IOCS because of the lack of clinical data addressing the concerns of tumor dissemination. We aimed to evaluate the safety of salvaged blood in actual clinical application of patients undergoing MSTS.

Materials and Method

We prospectively analyzed 42 patients who underwent MSTS between January 2014 and January 2016. Patients were divided into three groups depending on transfusion history: (i)no blood transfusion(NBT) group, (ii)salvaged blood transfusion(SBT) group and (iii)allogeneic blood transfusion(ABT) group. Primary outcome measure was progression-free survival (PFS) rates comparing between the three groups. Overall survival (OS), postoperative complication rates and length of hospital stay (LOS) were also studied as secondary outcomes.

Results

The median PFS was 2 months (range:1.5-20 months) in NBT group, 4.5 months(2-34 months) in SBT group and 3 months(8days-12months) in ABT group. Log rank test revealed that the difference in the PFS rates between the groups, however, was not significant (P=0.19). Univariate and multivariate Cox regression analyses revealed that primary tumour type and ECOG performance status were the factors significantly influencing PFS. Transfusion status did not increase the risk of tumour progression. Regarding OS, there was a trend towards better OS rates in SBT group compared to ABT or NBT group though the differences were not significant. Postoperative complication rates and length of stay were also favourable in SBT group compared to ABT and NBT group.

Conclusion

Patients who received salvaged blood transfusion had comparable outcomes in terms of tumour progression and survival to those who received allogeneic blood. Our study paves a path for larger cohort or randomized study where salvaged blood transfusion can be evaluated for its appropriateness and efficacy in patient blood management for oncological surgeries.