To the Editor:

Recent articles published in this Journal\(^1,2\) and one Editorial\(^3\) focused on granulocyte (PMN) transfusions from donors pretreated with granulocyte colony-stimulating factor (G-CSF) to increase cell numbers. Although the therapeutical value of granulocyte transfusions in infected neutropenic patients is not definitively established, as discussed in the Editorial by Strauss,\(^3\) the results reported show that PMN yield was dramatically (and safely) increased by administration of G-CSF. We draw the attention of readers to the fact that G-CSF may do more than increase numbers.

Several laboratories, including our own, have shown that G-CSF,\(^4,5\) as well as other cytokines,\(^6,7\) dramatically increases (twofold to threefold in a series of 7 donors) the life-span of PMN in vitro by inhibiting their apoptotic death. PMN primed by cytokines for prolonged in vitro survival retain functional competence throughout their life-span.\(^8\) We surmise that prolongation of functional PMN survival by G-CSF may contribute not only to high cell yields, but, and perhaps most importantly, provide cells with a better ability to withstand the steps of transfer and with a longer life expectancy in recipients. A comparison with historical controls of PMN levels in recipients at 18 to 24 hours after transfer of G-CSF-treated cells\(^9\) is compatible with, but does not prove, this hypothesis.

The prolonged life expectancy of G-CSF-treated versus untreated PMN may also be considered when evaluating the therapeutical value of granulocyte transfusions in different clinical trials. Finally, if prolongation of survival is indeed an important determinant of the therapeutical value of transfer of G-CSF-treated PMN, in vivo or in vitro exposure to other more effective cytokines could be considered for future evaluation.

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REFERENCES


Granulocyte transfusions from granulocyte colony-stimulating factor-treated donors: also a question of cell survival? [letter; comment]

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