We would like to suggest another factor, namely, that of decreased platelet aggregation, which may contribute to their observation. We studied platelet aggregation in 25 newly diagnosed patients with Parkinson's disease and 25 age- and sex-matched controls. None were diabetic, hypertensive, smokers, or on any treatment. Citrated blood was collected by venipuncture and centrifuged at 200g for 10 minutes, and the supernatant platelet-rich plasma was obtained. Platelet counts were measured using a platelet counter (Contraves, Switzerland). No patient had a low platelet count. Platelet aggregation was measured by the Born method\(^2\) using a four-channel aggregograph (Daiichi-PA 3220, Kyoto, Japan). Adenosine diphosphate (2.5 \(\mu\)M/ml), collagen (2.5 \(\mu\)M/ml), and epinephrine (3 \(\mu\)M/ml) were used as inducers. The stock solution was diluted with 0.85% saline. The aggregation was studied at fixed intervals of 5 minutes for collagen and 10 minutes each for adenosine diphosphate and epinephrine. The absorbance was measured as % aggregation. The results were analyzed statistically using Student's t-test.

Platelet aggregation induced by adenosine diphosphate and epinephrine was significantly decreased (32% and 60%, respectively) in Parkinson's disease cases, while collagen-induced aggregation was unchanged.

To the best of our knowledge, these findings have not been recorded elsewhere. We hypothesize that decreased platelet aggregation in Parkinson's patients may be a significant contributory factor for the reduced incidence of ischemic stroke.

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References

Glycerol Infusion Rates Warrant Caution

To the Editor:
We wish to comment on the assertion by Nau and colleagues\(^1\) that very high intravenous infusion rates of glycerol (>500 ml of 10% solutions given over 4 hours) are required to exert any significant osmotic effect on cerebral edema associated with acute stroke.

The most important side effect of such dosages is intravascular hemolysis.\(^2\) We conducted a critical evaluation of the latter adverse effect and its possible mechanism in the course of a large, randomized, double-blind clinical trial of intravenous glycerol treatment in patients with acute stroke. This in vivo and in vitro study\(^3\) suggested that hemolysis resulted from glycerol at the site of infusion rapidly entering red cells and destroying the red cells from osmotic induction swelling beyond a critical limit. Moreover, so long as the infusion rate was not allowed to exceed 125 ml/hr, even temporarily, clinically significant hemolysis was avoidable.

Japanese investigators and clinicians have reported that use of glycerol solutions containing small amounts of fructose can overcome this problem associated with more rapid infusion rates.\(^4\)\(^5\) Moreover, in vitro studies in our institution (Figure 1) are also consistent with such a possibility.

![Graph showing percentage of lysed red blood cells from two subjects after resuspension in normal saline following primary exposure in varying concentrations of glycerol in saline only (---) and glycerol plus fructose in saline (---). Red blood cells from three other subjects yielded similar findings. Primary exposure in the presence of fructose mitigates against saline resuspension hemolysis.]

Thus, regardless of the possible benefits before embarking on further studies to evaluate the value of more rapid glycerol infusions in managing acute stroke, it is important to address this anticipated and alarming degree of intravascular hemolysis.

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References

Multiple Aneurysms Caused by Hemodynamic Stress and Hypertension

To the Editor:
Increased hemodynamic stress is possibly a factor in the development of cerebral aneurysms. The clinical basis for this possibility includes the development of aneurysms in feeders of arteriovenous
Glycerol infusion rates warrant caution.
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