Pharmacokinetics of extended-release dipyridamole following administration through gastrostomy tube

Leonardo M Batista, J. Philip Kistler Stroke Research Center, Department of Neurology, Massachusetts General Hospital, Harvard Medical School, Boston, MA; David Crandell, Spaulding Rehabilitation Hospital, Harvard Medical School, Boston, MA; David M Greer, J. Philip Kistler Stroke Research Center, Department of Neurology, Massachusetts General Hospital, Harvard Medical School, Boston, MA;

Objective:

To evaluate whether dipyridamole concentrations achieved in the plasma of patients taking the medication through a gastrostomy tube (G-tube) are similar to those achieved in the plasma of patients who receive the drug orally.

Background:

Many stroke survivors have severe dysphagia and are unable to take antithrombotic medications orally, however the administration of these drugs through G-tubes has not been properly studied.

Methods:

Open-label, case-control study over 2 years in two academic centers. Twenty-four patients with acute ischemic stroke and an indication for antiplatelet therapy

for secondary prevention were included. Twelve patients with dysphagia requiring G-tube were cases, and 12 patients who were able to swallow safely served as controls. Extended-release dipyridamole was administered twice daily for five days through the G-tube, suspended in water. The 12 control subjects took the medication orally. We compared the dipyridamole plasma levels between the groups in 3 different time points on the fifth day: 2 (peak), 6 (mid-dose interval) and 12 hours (trough) after administration.

Results:

Dipyridamole plasma levels in control and G-tube groups were, respectively: 2.9 (2.7-3.3) vs. 2.5 (2.2-3.4), *P* =0.18, at 2 hours; 1.8 (1.5-2.2) vs. 1.9 (1.3-2.5), *P* =0.92, at 6 hours; and 1.2 (0.8-1.9) vs. 1.3 (0.9-1.4), *P* =0.69, at 12 hours. Our results show that both study groups achieved the expected therapeutic concentrations with no significant differences.

Conclusion:

Dipyridamole plasma levels obtained following administration of extended-release dipyridamole through G-tubes in dysphagic patients achieved similar therapeutic levels compared to those obtained by patients taking the medication orally. This is a reasonable therapeutic option in stroke patients who are unable to swallow, and who require secondary stroke prevention with an antiplatelet agent. No increase in adverse events was seen with administration by this route.