Platelet and haemoglobin levels in patients on isosorbide mononitrate and/or cilostazol with lacunar ischaemic stroke: data from the LACI-1 trial.

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Background

Cilostazol and isosorbide mononitrate (ISMN) have properties that may be of benefit in the context of cerebral small vessel disease and lacunar ischaemic stroke. As both drugs may influence platelet and haemoglobin levels, we sought to assess their effects using data from the lacunar intervention trial-1 (LACI-1).

Methods

LACI-1 recruited 57 patients with lacunar ischaemic stroke and randomised them to ISMN or cilostazol in isolation, or combined for 9 weeks. One group received both drugs but with a delayed start. Full blood counts were taken at baseline, and weeks 3 and 8. Platelet function was assessed with remote measurement of surface expression of P-selectin (CD62P) using kits sensitive to aspirin or clopidogrel at the same timepoints. Differences in haemoglobin and platelet levels and platelet function were assessed by multiple linear regression with adjustment for baseline value.

Results

Haemoglobin levels did not differ between the treatment groups at week 8 (Table), whilst platelet levels were slightly higher in those who received cilostazol compared with no cilostazol. No differences were noted in platelet function in unstimulated, aspirin or clopidogrel testing between groups.

Conclusions

Cilostazol and isosorbide mononitrate have no clinically concerning effects on haemoglobin and platelet levels and function in the short to medium term. Further assessment of the safety and efficacy of these medications following lacunar ischaemic stroke is warranted.

Week 8	Cilostazol v none		ISMN v none		Cil+ISMN v one or other	
Full blood count, adjusted for baseline	**MD (95% CI)**	**p-value**	**MD (95% CI)**	**p-value**	**MD (95% CI)**	**p-value**
Hb, mean (SD)	-3.72 (-8.39, 0.95)	0.12	-1.03 (-6.92, 4.87)	0.73	-2.35 (-6.82, 2.11)	0.30
Platelets, mean (SD)	35.73 (2.81, 68.66)	0.033	3.92 (-32.35, 40.19)	0.83	-7.43 (-36.76, 21.89)	0.62
Platelet function, adjusted for baseline						
Unstimulated median fluorescence, mean (SD)	-2.90 (-15.09, 9.30)	0.64	-8.23 (-20.68, 4.22)	0.20	7.51 (-4.01, 19.02)	0.20
AA median fluorescence, mean (SD)	-83.57 (-256.5, 89.37)	0.34	-14.13 (-192.5, 164.24)	0.88	109.73 (-54.01, 273.48)	0.19
ADP median fluorescence, mean (SD)	-1.33 (-77.64, 74.98)	0.97	-0.50 (-80.14, 79.13)	0.99	11.92 (-60.23, 84.07)	0.75

AA: arachidonic acid (aspirin test); ADP: adenosine diphosphate (clopidogrel test); CI: confidence intervals; Hb: haemoglobin; ISMN: isosorbide mononitrate; MD: mean difference; SD: standard deviation