

Erratum: Enhancement in the dynamic response of a viscoelastic fluid flowing in a tube
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It has been called to our attention that a few typographical errors in the printed version of the paper escaped our scrutiny and that a mistake was made in connection with the calculation of the optimum pumping frequency range for blood in the arteries. Concerning the typographical errors, the former Eq. (5) should be replaced by

$$V(r) = -\frac{(1-i\omega t_m)}{\beta^2} \left[1 - \frac{J_0(\beta r)}{J_0(\beta a)} \right] \frac{\partial P}{\partial z},$$

while the correct Eq. (8) should read

$$K^*(\omega) = -\frac{8(1-\omega^*)}{\alpha\bar{\omega}} \left[1 - \frac{2}{\sqrt{\alpha\bar{\omega}} J_0(\sqrt{\alpha\bar{\omega}})} J_1(\sqrt{\alpha\bar{\omega}}) \right].$$

As far as the optimum pumping frequency range is concerned, indeed an error is involved in the calculation. We mistakenly used 5 p and 20 p instead of the correct values 5 cp and 20 cp. This means that the correct results for α_l , α_h , $\omega_{\max l}$, $\omega_{\max h}$, ν_l , and ν_h should have read

$$\alpha_l = 3.5 \times 10^{-2},$$

$$\alpha_h = 42.875,$$

$$\omega_{\max l} = 13.42 \text{ rad/sec},$$

$$\omega_{\max h} = 0.38 \text{ rad/sec},$$

$$\nu_l \approx 2 \text{ Hz},$$

$$\nu_h \approx 0.06 \text{ Hz}.$$

Of course the value of $\alpha_h = 42.875$ is certainly above α_c and therefore at least both $\omega_{\max h}$ and ν_h are open to question, because they lie outside the range where Eq. (10) applies. In any event, the calculation was also flawed by the fact that we took the relaxation time of blood cells rather than the relaxation time of fresh blood. According to Thurston [1], this latter relaxation time is of the order of 1 sec. Using such relaxation time and the correct values of the viscosity we find

$$\alpha_l = 2.1 \times 10^{-3},$$

$$\alpha_h = 2.57,$$

$$\omega_{\max l} = 55 \text{ rad/sec},$$

$$\omega_{\max h} = 1.57 \text{ rad/sec},$$

$$\nu_l \approx 8.7 \text{ Hz},$$

$$\nu_h \approx 0.25 \text{ Hz}.$$

Therefore, the qualitative arguments that we used in the paper concerning the merits of the simple linear calculation remain valid.

We want to thank D. Tsiklauri and B. Mena for pointing out the typographical errors and the fact that the calculation of the optimum pumping frequency range for blood was not correct, respectively.

[1] G. B. Thurston, *Biorheology* **13**, 191 (1976).