Hydroxyethyl Starch (HES) 130/0.4 During Acute Normovolemic Hemodilution Increases Tissue Oxygen Tension Larger and Faster than HES 70/0.5 or HES 200/0.5

To the Editor:

Standl et al. (1) contribute new values for muscle oxygen tension (ptO_2; mm Hg), which challenge their published scope of baseline ranges, i.e., 21–50 mm Hg (1–12). Inevitably, hyperoxia either *increased* (from 25 to 99 mm Hg (3,12) or *decreased* ptO_2 (from 43 to 26 mm Hg (11). Hemodilution by administration of crystalloids (hematocrit 25 %) either did *not influence* ptO_2 (10,11) or caused an *increase* from 32 to 38 mm Hg (8,9). Using HES resulted in ptO_2 increases [6% HES 40, hematocrit 32%: from 16 to 23 mm Hg (4); HES 200/0.5, hematocrit 20%: from 35 to 45 mm Hg (5)]. A ptO_2 *decrease* (hematocrit 10%) was related to the diluent [HES 200/0.5: from 29/34 to 14/18 mm Hg (6); crystalloid or crystalloid/HES 70/0.5: from 32 to 18 mm Hg (8,9)]. Presently (1), hemodilution (6% HES 130/0.4, 70/0.5, and 200/0.5) caused *increases* in the 50th percentile of ptO_2 (from 44/49 to 56/60 mm Hg). Notably, the relative changes in the 10th percentile of ptO_2 (6 % HES 130/0.4) are advocated for a "larger and faster ptO_2 increase" (1), although clearly caused by the varying ptO_2 baseline values [18 mm Hg with HES 130/0.4 vs 21.5 or 27 mm Hg (1)]. In addition, ptO_2 proved clinically irrelevant due to the lack of normal values.

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