

Diabetes Augments and Inhaled Nitric Oxide Prevents the Adverse Hemodynamic Effects of Transfusing Syngeneic Stored Blood in Mice

Binglan Yu, Chong Lei, David M. Baron, Andrea U. Steinbicker, Kenneth D. Bloch, Warren M. Zapol

Anesthesia Center for Critical Care Research, Department of Anesthesia, Critical Care and Pain Medicine, Harvard Medical School at Massachusetts General Hospital, Boston, MA, USA 02114

Supplemental Tables

Table S1. Primers used in qRT-PCR

Gene	mRNA reference	Primer sequence	
		Forward	Reverse
HO-1	NM_010442	AAGCCGAGAATGCTGAGTTCA	GCCGTGTAGATATGGTACAAGGA
18S	NM_001081135	CGGCTACCACATCCAAGGAA	GCTGGAATTACCGCGGCT

HO-1, heme oxygenase-1; 18S, 18S ribosomal RNA

Table S2. Number of mice and transfusions in WT, HFD-fed WT, or db/db mice.

Type of transfusion	Number of mice			
	Awake WT	Awake HFD-fed WT	Awake db/db	Anesthetized db/db
FRBCs	5	6	9	7
SRBCs	6	6	12	7
SRBCs+iNO			9	
Supernatant of FRBCs			11	6
Supernatant of SRBCs			7	6
Washed FRBCs			9	
Washed SRBCs			6	
Oxidized supernatant of SRBCs			6	

Table S3. Comparison of hematological changes in WT, db/db or HFD-fed WT mice 10 minutes or 2 hours after transfusion of FRBCs or SRBCs

	WT mice			db /db mice			HFD-fed WT mice		
	Control	FRBCs	SRBCs	Control	FRBCs	SRBCs	Control	FRBCs	SRBCs
	(n=5)	(n=6)	(n=6)	(n=5)	(n=6)	(n=6)	(n=5)	(n=6)	(n=6)
<u>10 min</u>									
Hct (%)	39±0	44±1 [*]	46±1 ^{*†}	37±1	44±1 [*]	43±1 [*]			
Hb (g/dl)	12.8±0.2	14.3±0.4 [*]	15.1±0.2 ^{*†}	12.2±0.4	14.4±0.3 [*]	13.9±0.3 [*]			
Plasma Hb (mg/dl)	24±2	41±7	119±5 ^{*†}	36±5	49±7	123±15 ^{*†}			
<u>2 h</u>									
Hct (%)	39±1	46±1 [*]	47±1 [*]	42±1	48±1 [*]	49±1 [*]	39±1	46±1 [*]	46±1 [*]
Hb (g/dl)	12.7±0.3	14.9±0.2 [*]	15.5±0.2 [*]	13.6±0.3	15.5±0.2 [*]	16.1±0.2 [*]	12.7±0.3	14.9±0.4 [*]	15.2±0.3 [*]
Plasma Hb (mg/dl)	27±2	37±7	92±12 ^{*†}	37±4	47±4	117±23 ^{*†}	34±6	42±7	113±12 ^{*†}

Values are mean \pm SEM. FRBCs, infusing red blood cells stored for less than 24 hours; SRBCs, infusing red blood cells stored for 2 weeks; Hb, hemoglobin; Hct, hematocrit. * $p < 0.01$ differs vs control; † $p < 0.05$, ‡ $p < 0.01$ differs vs FRBCs.

Table S4. Hemolysis (%) of FRBCs or SRBCs after washing with various concentrations of sodium chloride

Sodium chloride (g%)	Hemolysis of FRBCs (% , n=3)	Hemolysis of SRBCs (% , n=3)
1.1	0.3±0.1	26.8±2.2
1.2	0.3±0.1	10.5±1.3
1.3	0.3±0.1	5.4±0.7
1.4	0.4±0.1	2.8±0.1
1.5	0.4±0.1	2.5±0.5

FRBCs, red blood cells stored for less than 24 hours; SRBCs, red blood cells stored for 2 weeks