LETTER TO THE EDITOR

Preclinical evaluation of the preservation of red blood cell concentrates by hypoxic storage technology for transfusion in sickle cell disease

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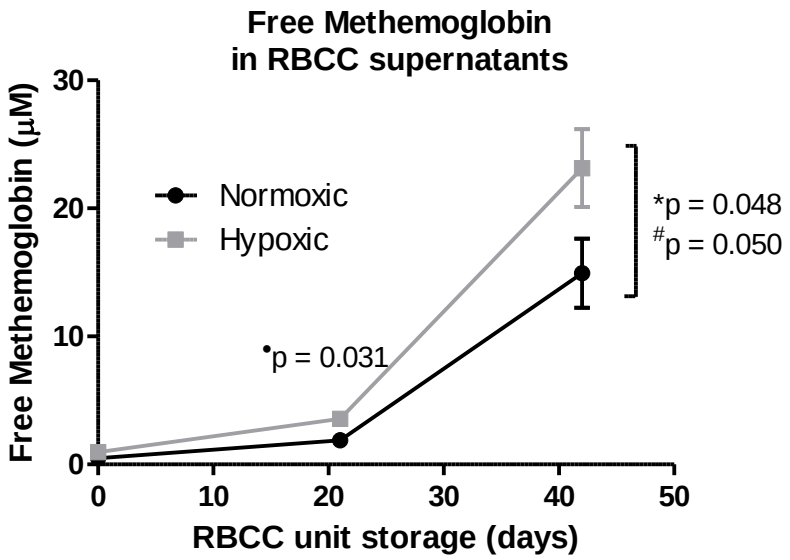
https://doi.org/10.3324/haematol.2021.279721

A



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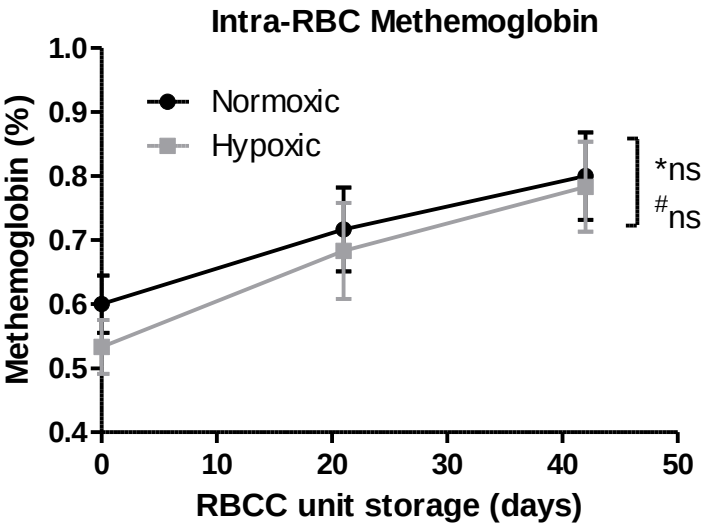

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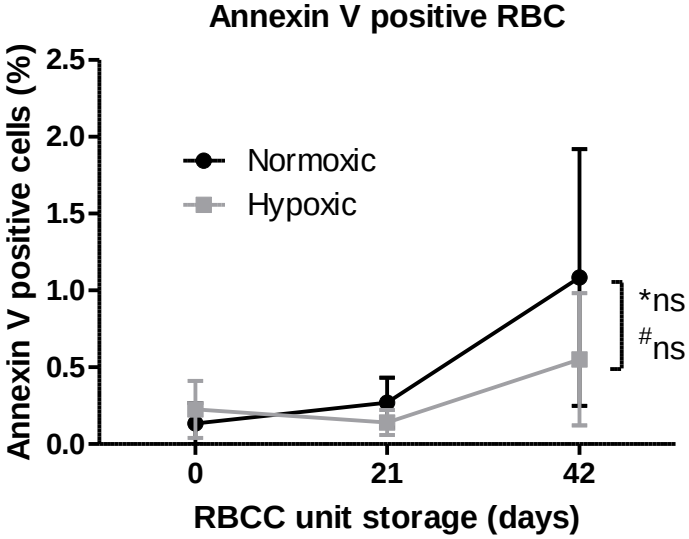
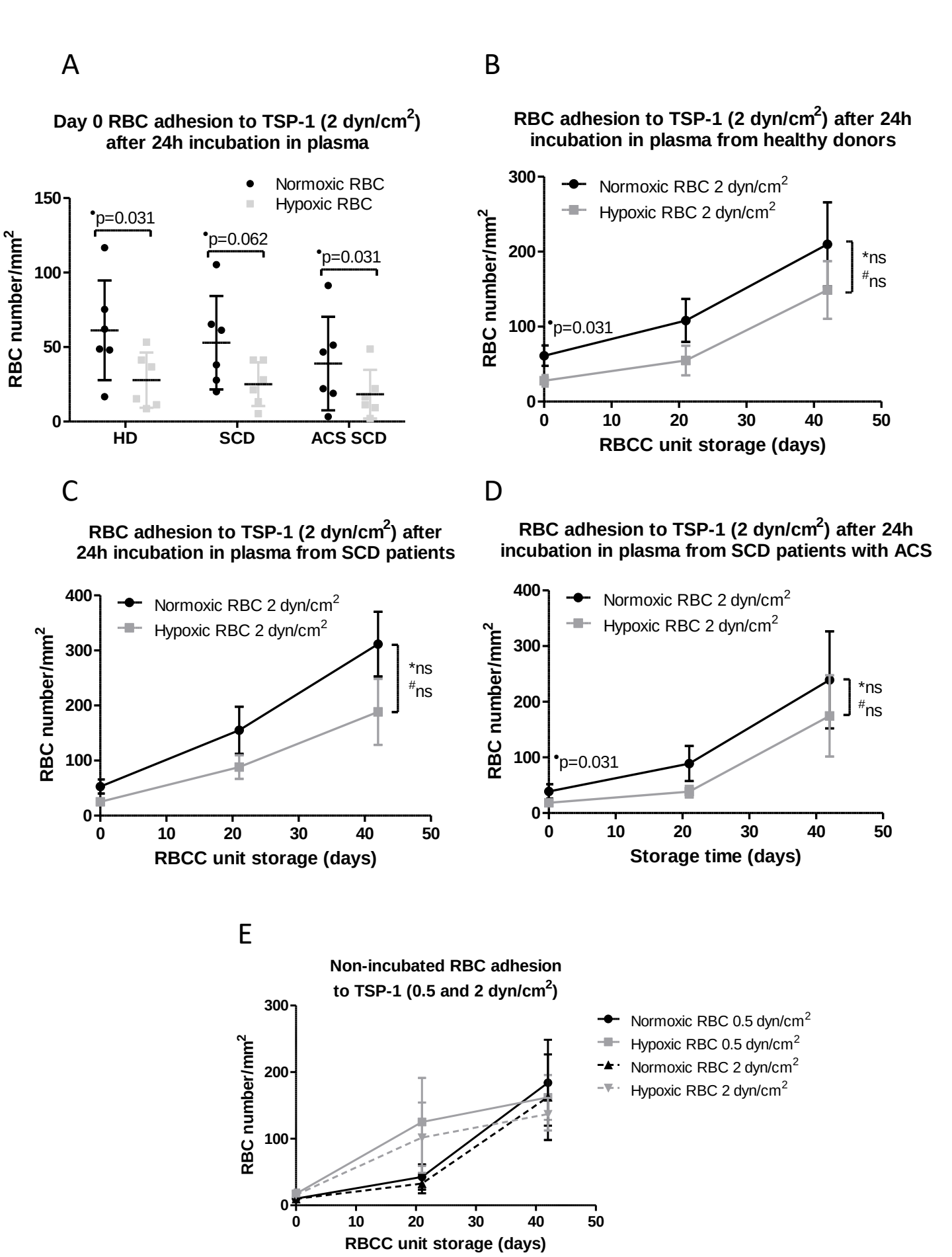


Supplemental Figure S1



Supplemental Figure S2

Supplementary figure legends

Supplemental Fig. S1. **Methemoglobin and senescence measurement during red blood cell concentrate (RBCC) storage.** Methemoglobin concentration in RBCC supernatant (A) and methemoglobin ratio (percentage of total hemoglobin) in RBC (B) from normoxic (black) or hypoxic (grey) bags throughout 42 days of storage. Mean +/- SEM of 6 independent experiments. *storage method effect, #interaction time/storage method, •comparison between hypoxic and normoxic storage at one time point. ns: not significant. (C) Annexin V positive RBC measured by flow cytometry in normoxic (black) or hypoxic (grey) bags throughout 42 days of storage. Mean +/- SEM of 6 independent experiments. *storage method effect, #interaction time/storage method, •comparison between hypoxic and normoxic storage at one time point. ns: not significant. MFI: mean fluorescence intensity, A.U.: Arbitrary Units.

Supplemental Fig. S2. **RBC adhesion to TSP-1 at 2 dyn/cm^2**. RBC from normoxic or hypoxic bags were sampled on day 0, 21 and 42 of storage and incubated for 24hrs at 37°C in the absence and presence of plasma from healthy donors (HD), steady state sickle cell disease patients (SCD) and sickle cell disease patients with an acute chest syndrome (ACS SCD). (A) RBC adhesion to TSP-1 on day 0 of storage at 2 dyn/cm^2. RBC adhesion to TSP-1 on day 0, 21 and 42 of storage at 2 dyn/cm^2 after 24hrs of incubation with HD plasma (B), SCD plasma (C) or ACS SCD plasma (D). (E) Non-incubated RBC adhesion to TSP-1 at 0.5 and 2 dyn/cm^2. Mean +/- SEM of 6 independent experiments, *storage method effect. #interaction time/storage method, •comparison between hypoxic and normoxic storage at one time point. ns: not significant

Supplemental Table S1 : SO_2 (%) during RBC storage in hypoxic or normoxic bags								
Bag #	D0 pre processing		D0 post processing		D21		D42	
	Hypoxic	Normoxic	Hypoxic	Normoxic	Hypoxic	Normoxic	Hypoxic	Normoxic
1	55.2	54	10.4	56.4	7.7	77.9	10.3	88.4
2	70.9	70	16	70.6	12.7	87.7	16.6	94.5
3	64.4	65.4	12.9	65.4	19.6	81.8	8.3	61.4
4	42.3	38.5	7	38.5	8.3	61.4	3	83.6
5	68	66.2	20.5	66.2	17	80.7	17	86.5
6	68.4	67.6	20.1	67.6	15.1	83.8	9.7	93.2

Supplemental Table S1. **Oxygen saturation in RBCC during storage**. Oxygen saturation (SO_2) was measured on a blood gas analyzer, in RBCC, before and after deoxygenation (Day 0 (D0) preprocessing and post processing respectively) as well as in unprocessed RBCC (normoxic bags). Oxygen saturation was then measured after 21 (D21) and 42 (D42) days of storage at 4°C.