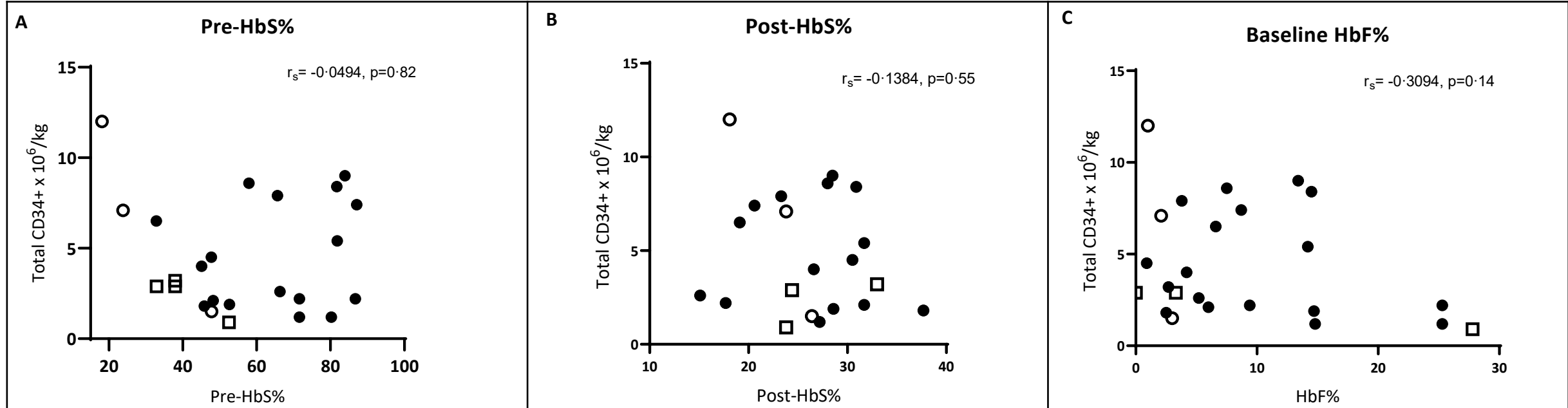


<b>Number<sup>^</sup></b>	<b>23</b>
<b>Gender (Male, %)</b>	14 (61%)
<b>Age in years (mean, range)</b>	29 (20-50)
<b>Genotype (n)</b>	
HbSS	20
HbSC	1
HbSβ+	2
<b>Total Hb (gm/dL, range)</b>	9·4 (7·3-13·6)
<b>% HbS pre-exchange transfusion (mean, range)</b>	55·9 (18·1-87·1)
<b>% HbS post-exchange transfusion (mean, range)</b>	26·4 (15·1-37·7)
<b>% HbF (mean, range)</b>	8·3 (1-27·8)
<b>% on HU prior to Plerixafor*</b>	87
<b>% on chronic transfusion therapy</b>	26
<b>Baseline SCD-Related Complications (%)</b>	
VOC	78%
Iron Overload	65%
ACS	57%
Stroke	39%
AVN	35%
PE/DVT	26%
Depression/Anxiety	22%
Cholecystectomy	18%
Pulmonary Hypertension	13%
Priapism	13%
OSA	13%
Line Infections	13%
Silent Cerebral Infarct	9%
Leg Ulcers	9%
Retinopathy	9%
TRV >2·5	9%
Moya Moya	9%
DHTR	4%

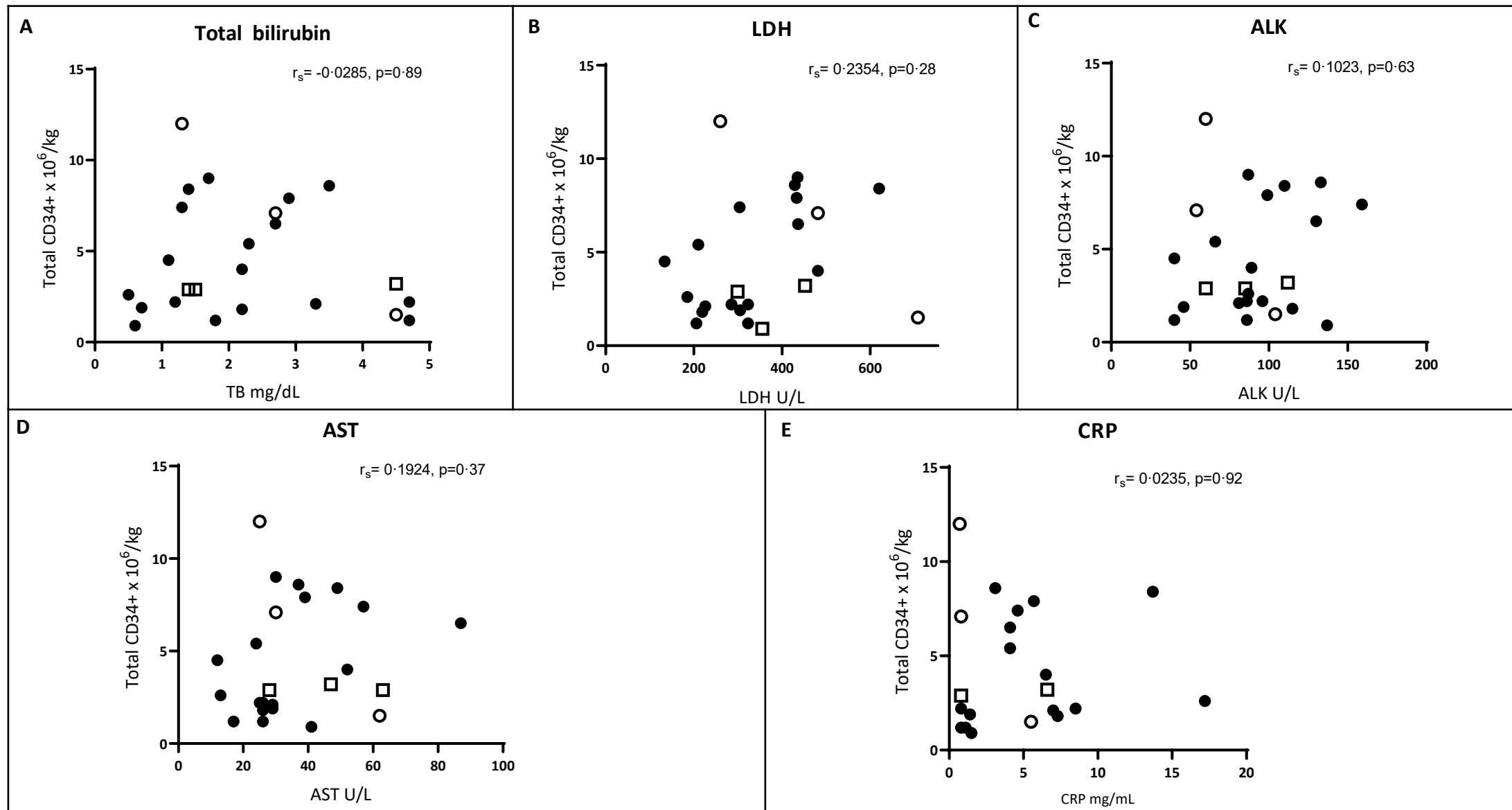
### Supplemental Table 1. Participant Demographics

ACS: acute chest syndrome, AVN: avascular necrosis, DHTR: delayed hemolytic transfusion reaction, Hb: hemoglobin, HU: hydroxyurea, PE/DVT: pulmonary embolism/deep vein thrombosis, OSA: obstructive sleep apnea, SCD: sickle cell disease, TRV: tricuspid regurgitant velocity, VOC: vaso-occlusive crisis. <sup>^</sup> NIH N=20, SJH cohort N=3. \*Hydroxyurea was discontinued at least 2 weeks prior to Plerixafor administration in all subjects



**Supplemental Figure 1. Correlation of total CD34+ collection with hemoglobin content**

A-D. Association of hemoglobin content (pre- and post-exchange transfusion HbS% and baseline HbF%) and total CD34+ cells/kg. HbF: fetal hemoglobin, HbS: sickle hemoglobin. □ participants on chronic transfusion and hydroxyurea (HU), ○ participants on chronic transfusions



**Supplemental Figure 2. Correlation of total CD34+ collection with biochemical surrogate markers of hemolysis and inflammation**

A-D. Association of biochemical surrogate markers of hemolysis (total bilirubin, LDH, AST, and ALK) to total CD34+ cells/kg; E. Association of CRP used as a marker of inflammation with total CD34+ cells/kg. ALK: alkaline phosphatase, AST: aspartate aminotransferase, LDH: lactate dehydrogenase, CRP: C-reactive protein. □ participants on chronic transfusion and hydroxyurea (HU), ○ participants on chronic transfusions