

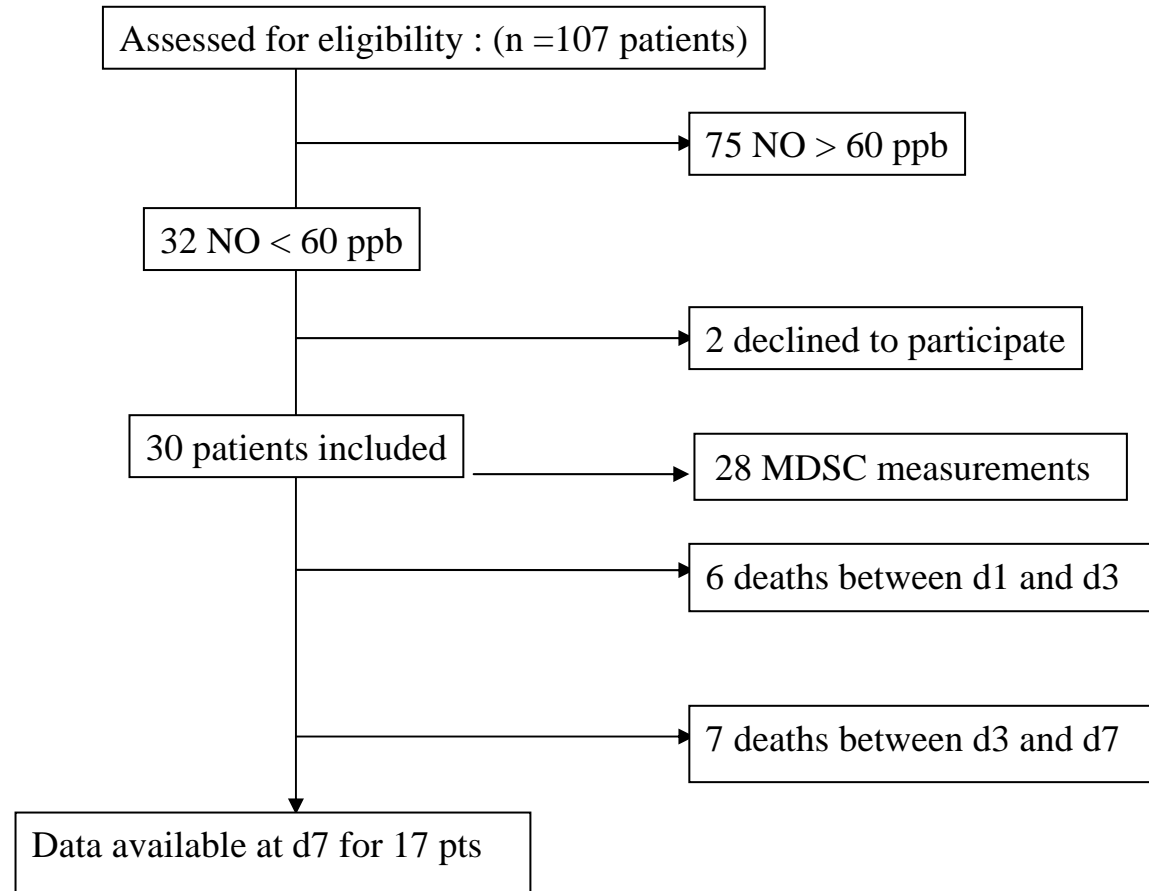
MDSC %	L arginine group	Placebo group	P value
Day 1	12 [9 ; 30]	14 [1 ; 23]	0.61
Day 3	3 [1 ; 23]	4 [2 ; 7]	0.954
Day 7	5 [3 ; 16]	10 [2 ; 13]	0.55

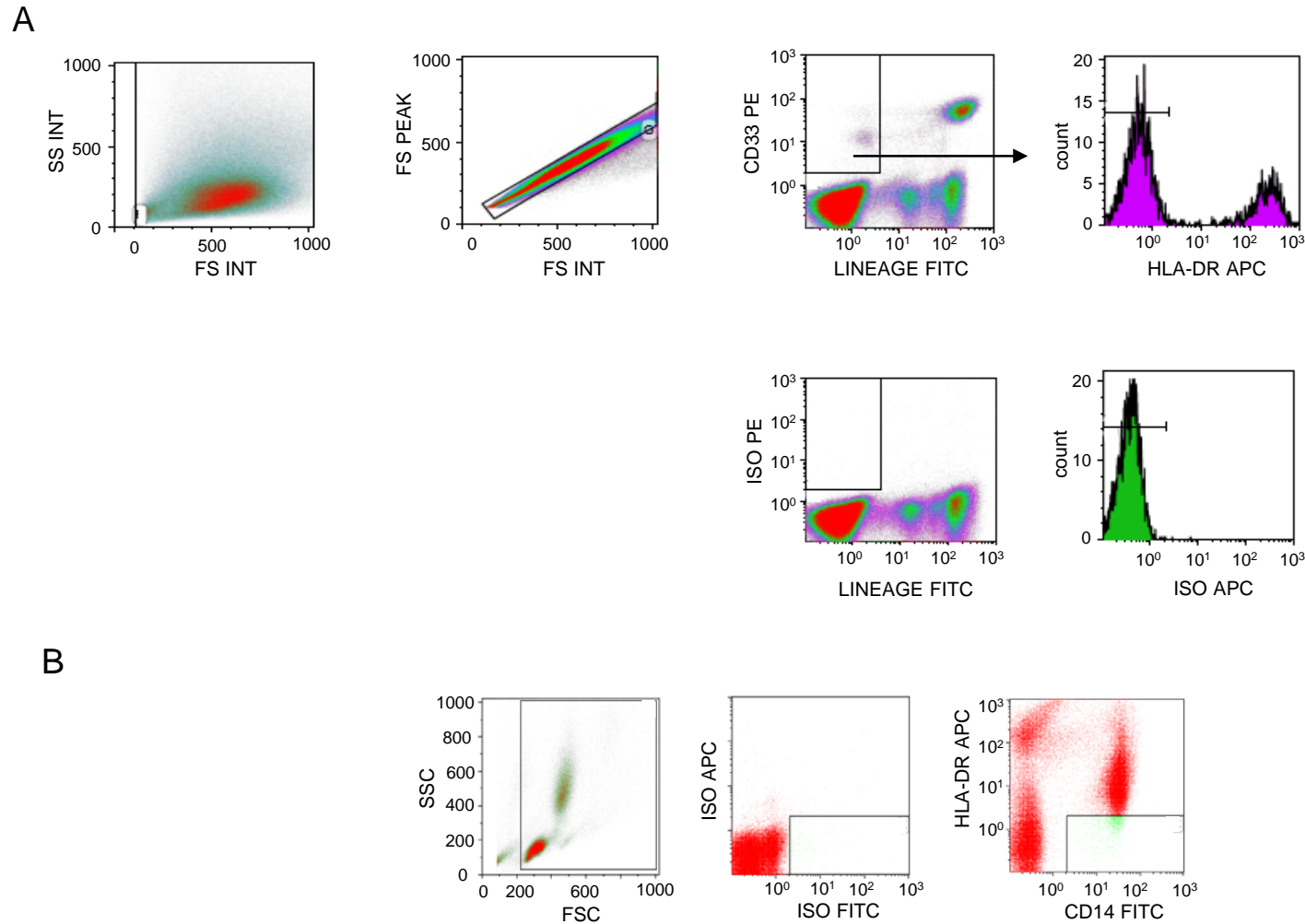
**Table S1** : No difference in the percentage of MDSC before and after L- arginine administration in the two randomized groups of patients.

<b>Primary reasons for intensive care</b>	<b>N (%)</b>
Neurological disease	11 (39.29)
Cardiac failure	7 (25)
Acute lung injury	7 (25)
Metabolic Failure	2 (7.14%)
Hypothermia	1 (3.57%)

**Table S2 :** Primary medical reasons for admission to the Medical Intensive Care unit

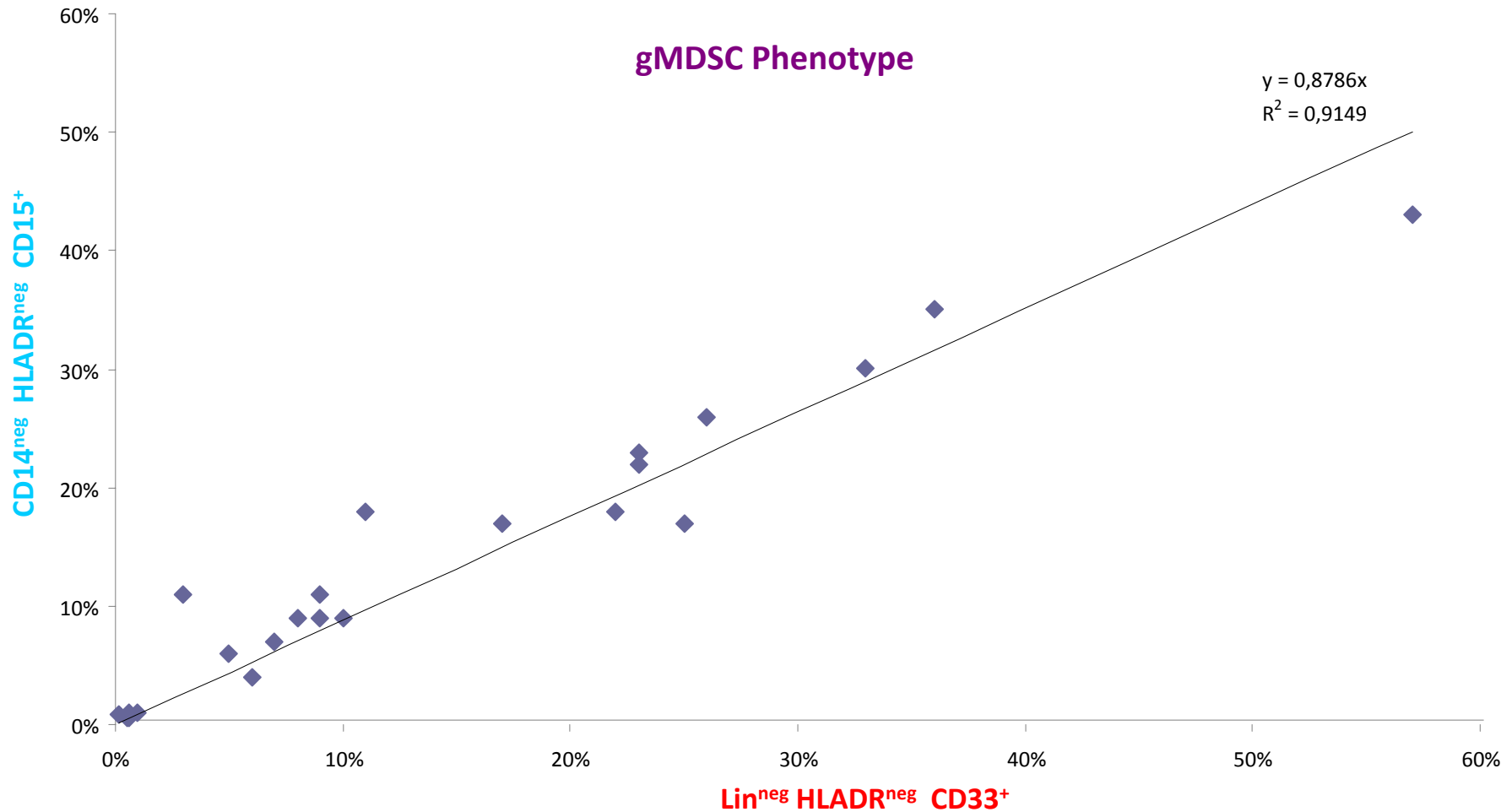
**Figure S1 : Consort Flow Diagram**





**Fig S2: Gating strategy to measure granulocytic MDSC and monocytic MDSC**

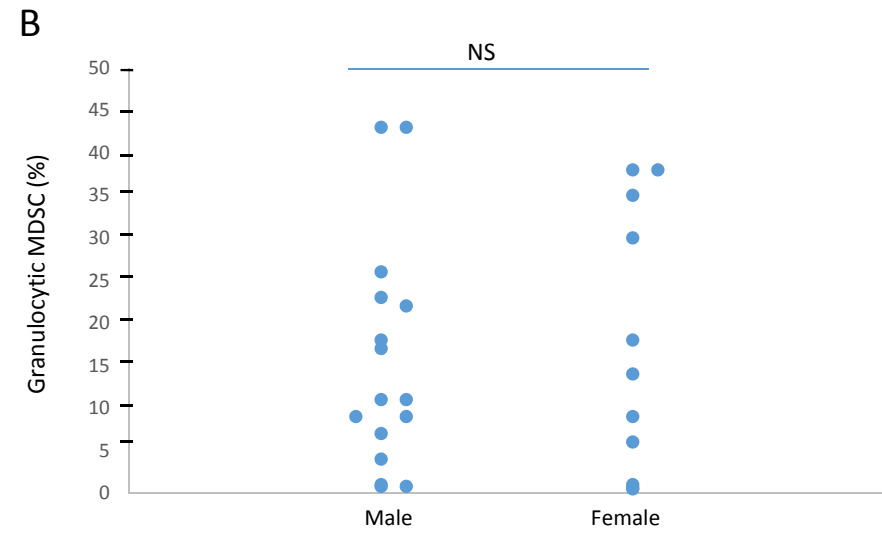
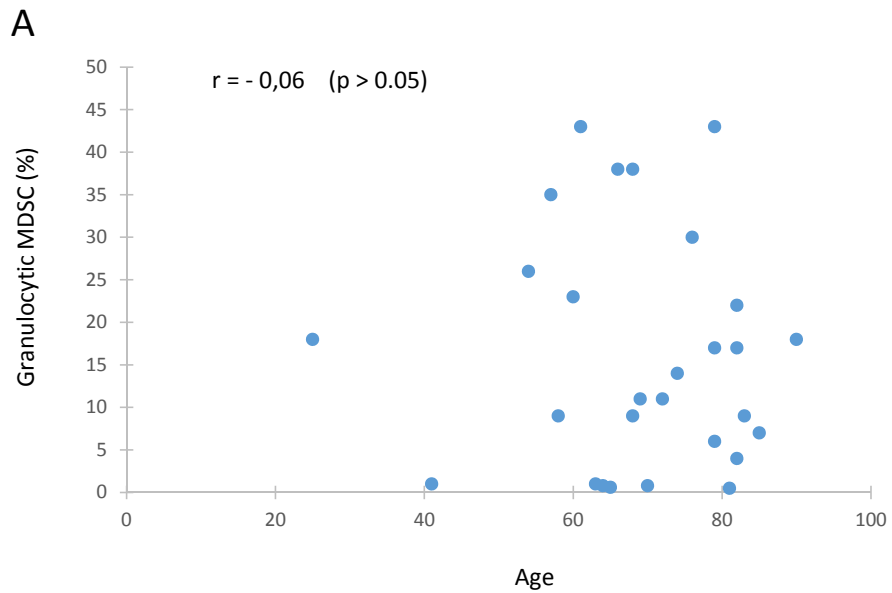
A : To measure granulocytic MDSC, PBMC were stained with anti-lineage (LIN) FITC including anti-CD3, -CD19, -CD56, -CD14 and PE labeled anti-CD33 and APC-labeled anti-HLA-DR. Following the initial FSC/SSC discrimination to eliminate cell debris and singlet selection (FSC-H vs FSC-A), the gate was set on LIN-negative cells, then gated on CD33+ cells and finally the percentage of HLA-DR<sup>neg/low</sup> cells was measured on these gated population to define the percentage of granulocytic MDSC in total PBMC. B : To measure monocytic MDSC, cellular debris were firstly eliminated by a gating on FSC-SSC and then PBMC were stained with FITC labelled CD14 and APC-labeled HLA-DR. Isotype control antibodies were included in each experiment.



**Fig S3 : Comparative analysis of granulocytic MDSC defined by various combinations of markers**

Granulocytic MDSC were defined as either Lin<sup>neg</sup>(including CD14<sup>neg</sup>cells) HLA-DR<sup>neg</sup>CD33<sup>+</sup> or CD15<sup>+</sup>CD14<sup>neg</sup>HLA-DR<sup>neg</sup> in total PBMC

They were then plotted on a figure and correlations were searched between these two populations using Spearman's test.



**Fig S4 : Absence of correlation between the age and the gender and gMDSC concentrations in critically ill patients**

gMDSC were measured in the blood of critically ill patients and their levels compared with the age (A) and the gender (B) of patients.

The correlations were searched using Spearman's test.