

Supplementary Table 1: Cytokines assayed

Cytokine	Abbreviation	Alternative Nomenclature
Epidermal Growth Factor	EGF	HMGF, PGF
Eotaxin	Eotaxin	CCL-11
Basic Fibroblast Growth Factor	FGF2	bFGF, FGF- β
Fms-related tyrosine kinase 3 ligand	Flt3 lig	
Fractalkine	Fractalkine	CX3CL-1
Granulocyte Colony Stimulating Factor	G-CSF	
Granulocyte-Monocyte Colony Stimulating Factor	GM-CSF	
GRO	GRO	CXCL-1
Interferon α-2	IFN α 2	
Interferon γ	IFN γ	
Interleukin-1 α	IL1 α	IL-1F1
Interleukin-1 β	IL1 β	IL-1F2
Interleukin-1 receptor antagonist	IL1ra	IL-1F3
Interleukin-2	IL2	Lymphokine
Interleukin-3	IL3	Multi-colony stimulating factor
Interleukin-4	IL4	
Interleukin-5	IL5	
Interleukin-6	IL6	
Interleukin-7	IL7	
Interleukin-8	IL8	CXCL-8
Interleukin-9	IL9	
Interleukin-10	IL10	Cytokine Synthesis Inhibitory Factor
Interleukin 12 subunit β	IL12p40	
Interleukin-12	IL12p70	
Interleukin-13	IL13	
Interleukin-15	IL15	
Interleukin-17	IL17	
Chemokine (C-X-C motif) ligand 10	IP10	CXCL-10
Monocyte Chemotactic Protein 1	MCP1	CCL-2
Monocyte Chemotactic Protein3	MCP3	CCL-7
Macrophage Derived Chemoattractant	MDC	CCL-22
Macrophage Inflammatory Protein-1α	MIP1 α	CCL-3
Macrophage Inflammatory Protein-1β	MIP1 β	CCL-4
Platelet Derived Growth Factor AA	PDGF-AA	
Platelet Derived Growth Factor AB/BB	PDGF-AAAB	
RANTES	RANTES	CCL-5
Soluble CD40 Ligand	sCD40L	CD154
Soluble Interleuking-2 Receptor	sIL2R	
Transforming Growth Factor α	TGF α	
Tumour Necrosis Factor α	TNF	Cachexin
Tumour Necrosis Factor β	TNF β	Lymphotoxin
Vascular Endothelial Growth Factor	VEGF	

Supplementary Table 2: Patient Demographics and Mechanism of Injury

Patient	Age	Sex	Mechanism of Injury	Post-resuscitation GCS	Pattern of Injury	Time elapsed between injury and monitoring (hours)
1	28	M	Fall down stairs	E1 V1 M2	Diffuse	64
2	28	M	RTA	E2 V1 M5	Diffuse	24
3	26	M	RTA	E2 V1 M4	Diffuse	29
4	35	M	Assault	E1 V1 M4	Diffuse (and evacuated subdural)	61
5	52	F	RTA	E1 V1 M5	Diffuse	22
6	18	F	RTA	E1 V1 M1	Diffuse	22
7	44	F	RTA	E1 V1 M1	Diffuse	96
8	25	M	RTA	E1 V1 M1	Diffuse	20
9	27	F	RTA	E1 V1 M1	Diffuse	24
10	25	F	RTA	E1 V1 M2	Diffuse	28
11	58	F	RTA	E1 V1 M1	Diffuse	24
12	61	F	RTA	E1 V1 M1	Diffuse	20

GCS – Glasgow Coma Scale (3 minimum to 15 maximum)

E – Eye Opening Score (1 to 4)

V – Verbal Score (1 to 5)

M – Motor Score (1 to 6)

Supplementary Table 3: Peak Time Points in Relation to Time of Injury

Cytokine	Timing of Peak Timepoint (hours following injury) in each Patient											
	1	2	3	4	5	6	7	8	9	10	11	12
EGF				102							96	
FGF2	<60		<30	<60			156				126	
Flt-3 lig							142				126	
Fractalkine			36	30						76	126	
G-CSF	<60	60	36	<60	30	30		68	<24	64	60	32
GM-CSF	72											
GRO	<60	<24	<30	<60	30	<24		38	<24	40	126	40
IFNα2	66						166		<24			
IFNγ	66						166		<24		144	
IL1α	78	<24					142					
IL1β	<60	<24	<30		<24		136	44	<24		138	<20
IL1ra	66		36		30	30				64	144	80
IL3	<60	<24										
IL6	<60	48	36	72	30	30		50	36	40	66	128
IL7	<60			<60					<24	<28	132	
IL8						<24	114	32	<24	<28	132	104
IL9		90	54									
IL10			108	138			138				144	134
IL12p40		42					166					
IL12p70			<30	132					36	88	126	134
IL13				60								
IL15			48	138					36			
IL17				144								
IP10	78			78		72	142	52	36	52		62
MCP3					42	30	138	124				128
MDC	<60						166					134
MIP1α	<60		36	<60	30			32	32		132	<20
MIP1 β	<60		<30	<60	30	54					132	<20
PDGFAA		48				30	138	50		<28	132	
PDGF- AAAB						<24	126	<20	132		132	
RANTES	<60	<24	<30	<60		<24	156	<20	60	40	<24	80
sCD40L	<60						142	<20	<24	40	132	
sIL2Ra							156				138	
TGFα	<60		<30				156					
TNF	<60		<30	138	<24						126	<20
TNF β								50				
VEGF	72			144		30						

For definition of a 'peak' please refer to the Materials and Methods section. The symbol '<' indicates that the first sample taken had the highest concentration of cytokine, and may therefore reflect the downstroke of an earlier peak. The 'true' peak is likely to occur on or before this time. Where no peak was apparent the entry is left blank.

Supplementary Table 4: Mean Arterio-Jugular (AJ) Difference

Cytokine	Mean AJ Difference (pg/ml)					
	Post-injury Day 2	Post-injury Day 3	Post-injury Day 4	Post-injury Day 5	Post-injury Day 6	Post-injury Day 7
EGF	1.875141	-0.23252	-0.95891	3.84015	-4.47453	-4.65995
Eotaxin	1.603117	2.136182	-3.01845	-1.45033	-0.29368	1.619965
FGF2	-3.81173	2.927065	4.092492	0.952679	1.279743	10.33952
Flt3 lig			4.646429	-15.1572	21.25088	
Fractalkine	-8.29544	21.32357	19.84808	1.636581	9.232561	-143.593
G-CSF	17.35724	15.13912	-81.2502	-56.0841	-5.62361	41.16102
GM-CSF	25.8641	-0.59097	21.89753	-15.8341	-28.0875	-3.25435
GRO	54.35266	39.96827	-31.5682	-43.4861	30.21222	14.07079
IFN α 2	-20.0295	15.52018	21.17979	-1.42106	-15.7466	-153.81
IFN γ	-5.69468	2.840948	5.436678	3.232216	-1.20917	-2.47647
IL1 α	-29.0093	19.12729	15.62757	21.36284	13.28514	-14.3645
IL1 β	1.532934	0.286592	0.636638	-0.53883	-0.14313	
IL1ra	-0.31201	4.516077	28.32607	3.513606	9.683155	3.381515
IL2	-2.99707	-0.24641	3.137436	1.815665	0.383141	0.156431
IL3	0.329574	1.097421	0.898467	0.012675	0.713488	-0.1213
IL4	-19.9944	42.47096	23.01108	-55.1626		
IL5	-0.04789	1.046874	0.594313	-1.15427	0.520716	
IL6	-4.35382	82.96537	-1.93854	-8.22118	14.74944	-2.29607
IL7	-11.1971	-29.6719	-7.92666	-4.52652	0.396277	
IL8	2.620368	-4.31435	-2.72191	-2.23151	-2.13403	-2.99019
IL9	-3.44582	0.150914	-0.92133	-8.7895	-0.3535	
IL10	-1.78515	-1.28865	1.570428	2.047966	-1.20761	4.678682
IL12p40	7.89176	2.930595	1.007224	-4.68024	-2.97958	
IL12p70	0.458103	0.428805	-0.12325	0.353194	9.529072	-0.03069
IL13	0.069866	5.612306	-0.97719	-1.61861	-0.07204	
IL15	0.273691	0.802119	1.104679	-0.27227	0.303366	-3.59581
IL17	-0.94552	-0.98045	2.786743	2.283847	-0.13902	-4.46986
IP10	28.43872	30.39634	74.00711	-11.3218	11.86702	4.856976
MCP1	-82.8728	-12.2543	-90.7948	-27.4566	7.44504	4.417557
MCP3	-1.28728	2.436847	-0.60862	-1.09926	0.378929	0.25002
MDC	35.68933	104.1084	76.33614	-22.1188	15.70059	-39.4056
MIP1 α	1.194599	1.131667	5.755247	5.008562	1.313067	-2.83107
MIP1 β	0.659943	8.123797	4.366846	3.14231	3.754314	-0.93431
PDGF-AA	-231.634	354.5443	-625.408	-170.341	301.179	25.41548
PDGF-AAAB	61.03182	494.5334	-1071.12	-319.602	492.5231	14.22242
RANTES	163.4358	89.23407	9.488974	89.76546	281.2552	162.4651
sCD40L	23.35076	95.10656	-459.68	-32.2113	67.51848	37.09804
sIL2R	18.42131	62.07483	26.69246	36.09919	41.82224	
TGF α	4.955435	4.059651	1.766392	-0.46947	1.033211	1.36363
TNF α	-0.0835	0.569497	1.21655	-0.29566	0.774831	1.600922
TNF β	-0.88369	4.942679	10.17798	-3.73204	-3.19672	
VEGF	32.38924	15.32384	28.60341	-27.3167	-37.453	

The AJ difference (Arterial minus Jugular Venous) was calculated for each pair of plasma samples. The mean of these across all 12 patients is calculated for samples taken on the same day post-injury. As no samples were taken in the first day post-injury, there are no values for day 1. The values that reached statistical significance using a Wilcoxon Signed Rank Test (Arterial – Jugular) are coloured in red. A p-value of 0.008 (~0.05/6) has been used for statistical significance as for each cytokine there are 6 comparisons (each cytokine's data is split into 6 days, day 2 to day 7).