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Data article

Dataset of plasma and aqueous humor cytokine profiles in patients with exudative age related macular degeneration and polypoidal choroidal vasculopathy



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ABSTRACT

In this report the data was obtained from a prospective case-control study with a sample size of sixteen patients with exudative age related macular degeneration (AMD) due to choroidal neovascularization (CNV) and eighteen patients with polypoidal choroidal vasculopathy (PCV) and fifty controls (cataract patients without any other ocular diseases). Luminex bead based multiplex assay with a panel of 41 analytes was used to study the cytokine levels in plasma and aqueous humor.

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Specifications Table

Subject area	<i>Biology</i>
More specific subject area	<i>Plasma and aqueous humor cytokine levels in exudative age related macular degeneration (AMD)</i>
Type of data	<i>Table</i>
How data was acquired	<i>Bead based multiplex assay using the Luminex xMAP technology</i>
Data format	<i>Raw</i>
Experimental factors	<i>Plasma and aqueous humor samples were collected from study subjects and each sample was analyzed for 41 cytokine levels</i>
Experimental features	<i>Milliplex[®] MAP human cytokine / chemokine magnetic bead panel -1 kit (Millipore, USA) with FlexMAP 3D (Luminex[®]) platform was used for cytokine profiling in each sample</i>
Data source location	<i>Singapore</i>
Data accessibility	<i>Data is with this article</i>

Value of the data

- Here we report the plasma and aqueous humor cytokine levels in patients with exudative AMD, PCV and controls (cataract patients without any other ocular diseases).
- In exudative AMD patients, aqueous humor cytokines GRO, MDC and MIP-1 α were significantly higher than controls ($p < 0.04$).
- In PCV patients, aqueous humor cytokines GRO, MDC, MIP-1 α , MIP-1 β , IL-8, IP-10 and MCP levels were significantly higher than controls ($p < 0.03$).
- No significant differences were seen in plasma cytokine levels between cases and controls.
- None of the plasma and aqueous humor cytokines showed significant differences between exudative AMD and PCV.
- This data will help researchers to understand the differences in cytokine expression levels between patients with Exudative AMD, PCV and controls.
- This data will also help researchers to understand the differences between plasma and aqueous humor in patients with Exudative AMD, PCV and healthy controls.

1. Data

The data presented in this article was obtained from a prospective case-control study and shows the concentration of 41 cytokines in plasma and aqueous humor from patients with exudative age related macular degeneration (AMD), polypoidal choroidal vasculopathy (PCV) and healthy controls (Table 1).

2. Experimental design, materials and methods

In a prospective case-control study, sixteen patients who were diagnosed with exudative age related macular degeneration (AMD) due to choroidal neovascularization (CNV) and eighteen patients with polypoidal choroidal vasculopathy (PCV) and fifty age and gender matched cataract patients without any other ocular complications (controls) were recruited. The study was approved by the Institutional review board of Tan Tock Seng Hospital, Singapore and adhered to the tenets of the Declaration of Helsinki. Prior informed consent was obtained from all the subjects. Five milliliters of peripheral venous blood collected aseptically from 14 AMD patients, 18 PCV patients and fifty controls and approximately 200 μ L of aqueous humor collected from 16 AMD patients, 16 PCV patients and 41 controls using standard protocols were used for cytokine profiling [1]. Clinical samples were

Table 1

Mean \pm SD concentrations (pg/mL) of plasma and aqueous humor cytokine concentrations in both cases and controls. Note: Empty cells represent samples negative for that particular analytes.

	Plasma controls		Plasma AMD		Plasma PCV		Aqueous controls		Aqueous AMD		Aqueous PCV	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
EGF	34.37	44.86	29.7	35.86	19.29	12.21	2.29	0.78	2.7	0.98	2.32	0.93
Eotaxin	94.81	53.9	116.2	44.69	102.59	40.73	7.44	3.07	9.44	2.49	8.42	5.37
FGF2	133.04	140.92	96.23	69.19	131.11	105.96	17.76	10.45	23.94	11.85	16.71	11.38
Flt3l	123.58	163.91	55.36	36.45	75.16	82.94	6.38	3.15	7.17	4.05	6.58	5.12
Fractalkine	109.64	116.54	71.73	40.48	87.26	53.8	37.62	17.66	44.87	21.32	48.1	24.36
G-CSF	106.67	159.63	212.41	442.16	90.74	67.08	2.88	1.78	5.96	4.28	8.75	10.64
GM-CSF	42.99	146.47	49.37	114.28	24.08	22.51	1.57	0.63	1.69	0.58	1.91	0.96
GRO	153.64	103.76	143.85	249.06	124.03	74.77	28.92	11.65	43.87	15.7	61.45	69.35
IFN-a2	89.99	227.64	20.04	6.13	41.04	50.9	6.28	2.95	6.17	3.81	8.56	4.29
IFN-g	55.83	76.95	43.61	51.96	38.23	33.93	0.66	0.5	0.5	0.37	0.49	0.27
IL10	5.14	11.05	3.12	2.28	15.04	30.15	1.04	0.73	2.4	3.84	4.03	7.4
IL12p40	50.25	131.09	15.47	17.81	34.23	55.93	3.4	2.8	2.96	1.87	3.8	3.65
IL12p70	25.16	52.73	13.69	13.57	31.89	48.17	1.44	0.71	1.09	0.37	0.87	0.84
IL13	17.42	24.21	31.19	56.86	17.01	20.98	0.63	0.77	1.27	1.63	1.52	1.47
IL15	2.91	4.04	1.29	1.34	4.26	8.76	2.65	0.75	2.94	1.3	2.86	1.19
IL17a	35.88	47.08	19.9	34.93	22.33	19.8	0.85	0.86	1.32	0.63	2.05	0.44
IL1a	143.41	241.42	131.65	228.37	56.57	63.77	0.47	0.29			0.98	0.81
IL1b	4.7	13.15	1.42	1.85	6.99	18.91	0.4	0.28	0.28	0.12	0.46	0.18
IL1ra	28.95	36.89	36.95	85.89	41.98	44.84	5.06	7.11	8.6	12.39	16.54	17.68
IL2	15.3	28.69	6.55	7.34	11.38	15.32	0.64	0.51	0.59	0.3	0.6	0.35
IL3	0.53	0.53			0.31	0.2						
IL4	12.26	15.08	20.78	15.72	19.75	25.3	2.85	2.48	0.12			
IL5	2.92	10.21	4.24	7.57	6.81	17.55	0.31	0.34	0.28	0.29	0.34	0.4
IL6	12.64	17.98	5.35	6.19	8.34	12.78	3.29	9.17	8.64	13.25	8.44	13.59
IL7	8	15.55	3.08	2.85	4.27	6.5	1.96	1.97	1.26	0.83	1.58	0.59
IL8	15.42	16.17	10.67	12.45	10.55	7.14	8.47	6.11	13.46	10.61	236.64	799.78
IL9	2.85	4.96	1.58	1.62	29.7	75.4	0.55	0.31	0.32	0.11	0.29	0.18
IP10	327.31	517.44	361.31	394.37	285.33	233.57	257.23	184.76	338.47	233.22	2135.08	5330.65
MCP-1	373.31	101.07	384.24	113.97	365.17	127.88	1098.99	465.34	1253.65	394.01	3619.71	4721.22
MCP-3	21.13	19.15	37.37	64.73	27.09	21.05	8.27	3.82	9.52	6.72	19.6	22.42
MDC	535.96	256.71	587.55	216.45	485.84	148.26	18.75	11.21	36.83	26.67	44.39	28.3
MIP-1a	11.4	12.18	10.25	13.1	9.32	8.73	6.25	3.58	13.02	5.85	12.31	7.81
MIP-1b	53.77	61.35	51.24	49.45	53.42	56.5	10.86	6.63	19.15	21	15.85	6.87
PDGF-aa	327.68	327.11	192.47	304.05	216.79	168.48	30.11	20.81	33.59	19.33	45.3	28.8
PDGF-ab/bb	377.63	681.41	764.6	1837.83	243.42	162.78	6.47	4.55	4.74	4.26	6.66	2.64
RANTES	711.33	554.86	680.21	997.16	625.8	381.75	4.06	5.06	3.44	4.05	1.83	0.51
Scd40l	1094.54	574.32	421.17	379.18	951.31	732.54	1.39	1.95	1.57	3.11	2.5	3.32
TGF-a	4.82	7.36	9.24	11.71	2.79	3.08					0.47	0.37
TNF-a	10.1	8.35	9.75	4.13	9.49	4.16	0.32	0.13	0.3	0.2	0.4	0.19
TNF-b	76.2	182.81	93.82	208.04	57.81	73.79	0.78	0.81	0.52	0.1		
VEGF	963.02	1478.15	688.77	845.02	506.81	471.15	55.85	34.73	37.38	20.46	50.22	24.22

transferred onto the ice immediately after the collection and stored at -80°C freezer until cytokine analysis.

Just before analysis clinical samples were thawed on ice and centrifuged for 5 minutes at 3000 rpm. Supernatant and plasma were separated from aqueous humor and plasma, respectively and transferred onto the ice. Twenty five microliters of each sample was analyzed for a panel of 41 cytokines (Table 1) by Luminex bead based multiplex assay using Milliplex[®] MAP human cytokine / chemokine magnetic bead panel -1 kit (Millipore, USA) with FlexMAP 3D (Luminex[®]) platform following the manufacturer's instructions [1,2]. Plasma and aqueous humor cytokine concentrations (pg/mL) were mentioned in Table 1 and mean \pm SD concentrations in each group were mentioned in Table 2.

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Declarations of interest

None.

Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.05.085>.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.05.085>.

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