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# TREATMENT OF JUVENILE RHEUMATOID ARTHRITIS WITH INTERFERENTIAL FREQUENCY MICROCURRENT THERAPY (FSM) AND MONITORING WITH HEMAVIEW™ FOLLOWING MEDICATION ASSOCIATED-MORBIDITY: A CASE STUDY.

Wayne G Reilly<sup>1</sup> and Paul Mannion<sup>2</sup>  
Wellness Care Australia Pty Ltd<sup>1</sup> Health World Pty Ltd<sup>2</sup>

## Background

Juvenile rheumatoid arthritis (JRA) comprises a variety of chronic inflammatory diseases causing erosive arthritis in children. Progression often leads to extreme functional issues including , joint and back pain, swelling of joints , contractures, pain, and blindness. These phenotypic changes in juvenile arthritis become a life burdening issue. The continuation of the inflammatory disease activity and medication-associated morbidity are associated with long term morbidity and social issues (Moorthy*et al*, 2010). In the United States the direct the costs in 1989 were estimated at \$285 million for children with arthritis. One of the most frequently occurring paediatric rheumatic diseases, JIA, impacts bio-psychosocial aspects of patients and families necessitating careful diagnosis and initiation of appropriate treatment. Here we describe a case of JRA in a 10 year old girl who was not responding to conventional treatment and exhibiting severe morbidity. A combination of naturopathic treatments produced a normalisation of pathological indicies and return to normal physiology.

## Hemaview™ Methodology

Hemaview™ is a technique that uses a drop of peripheral blood from a finger prick using a sterile lancet device. The drop of blood is collected onto a glass Menzel-Glaser frosted microscope slide and a Menzel – Glasser, 22x40mm number 1.5 coverslip is carefully placed onto the drop of blood within a few seconds of collection. The blood was then examined using a Zeiss Optiphot darkfield microscope, with a darkfield oil condenser, using Achromplan objectives x40, x100 (iris oil immersion - na1.25) and Immersol 518 N immersion oil. A differential count was carried out using Hemaview™ computing software and images of white blood cells collected.

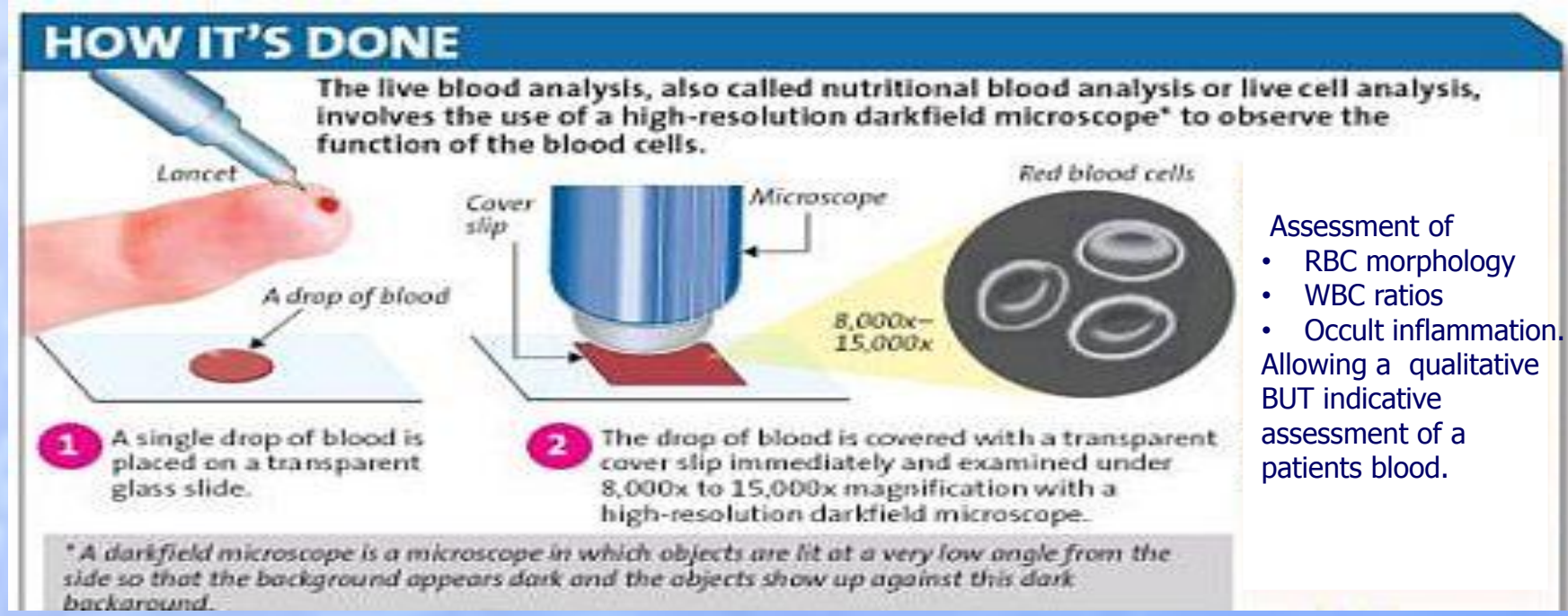


Figure 1: Hemaview technique



Figure 2. Interferential frequency devices used in study  
Frequency Specific Microcurrent (FSM) and INF4160.

Figure 3 : Pathology Results – Naturopathic treatment started 30/9/10 included 1 week of intense FSM in clinic & daily INF at home.

Treatment	Weeks 1-12	Frequency
FSM	Monthly	40Hz/116Hz – 600 microamps 970Hz/200Hz – 600 microamps
INF	Daily	Program 2 & 4 P2=2Hz to 10Hz -2Hz ramped freq in 12 second sweep cycles. P4= 80Hz to 160Hz- 12Hz ramped freq in 12 second sweep cycles.

## Naturopathic treatments included

- A combination of anti-inflammatory herbs including Devils Claw, Cats Claw, Turmeric extract, Hops extract, Olive leaf extract and Mitake mushroom.
- Nutritional supplements including high EPA fish oil, B12 and folate, *Lactobacillus acidophilus* GG (LGG) and Krill oil.

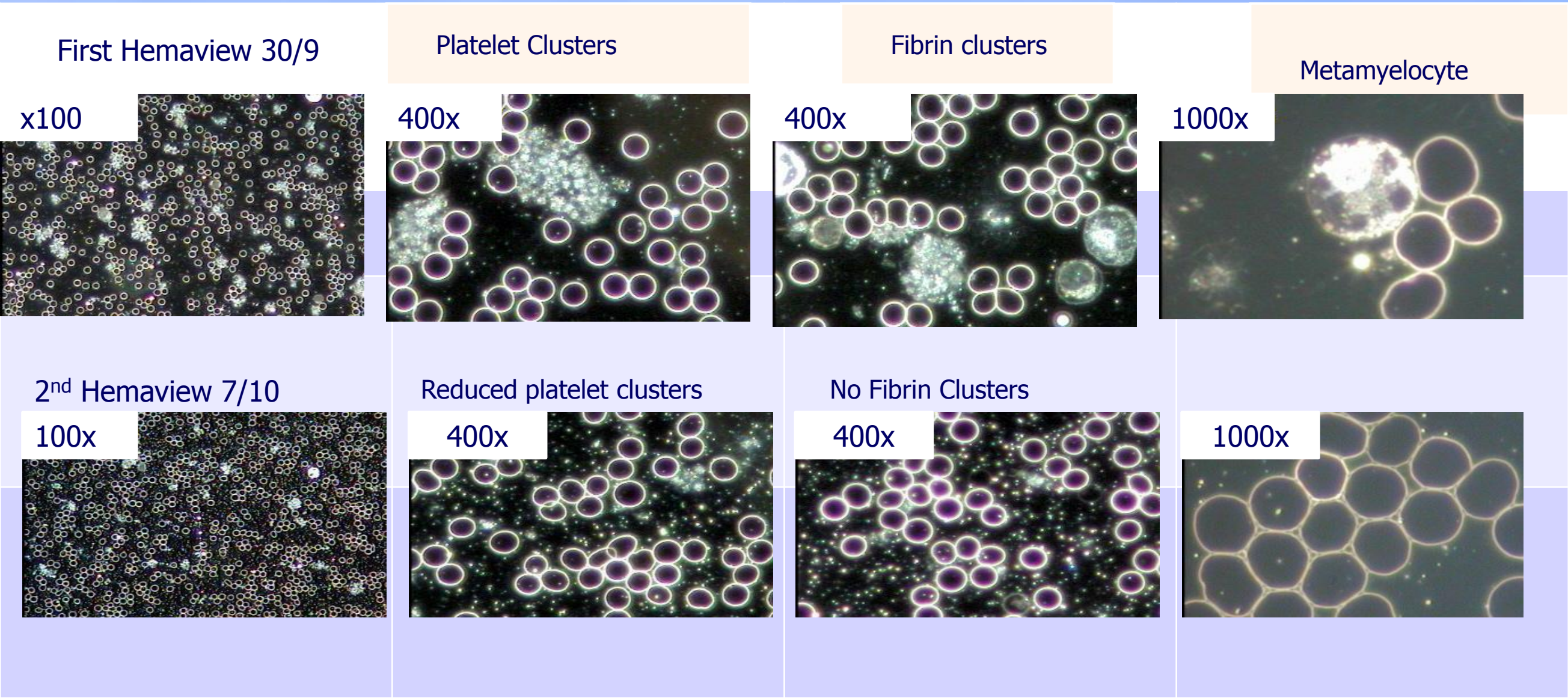


Figure 3: Hemaview at 1<sup>st</sup> and 2<sup>nd</sup> appointment.

Figure 4: Pathology Results over Treatment Period

	Iron	Ferritin	Trans Sat	TIBC	CRP	ESR	GGT	ALP	ALT	AST	platelets
23/1/09	nd	nd	nd	nd	80	54	40	169	13	19	542
25/9/09	nd	nd	nd	nd	61	42	41	147	32	28	425
16/6/09	<5	156	<9	55	70	123	99	279	132	405	1166
22/9/09	nd	nd	nd	nd	129	nd	193	431	71	72	1139
27/4/10	6	45	9	67	24	43	23	295	48	34	505
8/7/10	15	43	22	69	3	8	16	255	62	59	418
NR	5-25	30-150	20-55	45-72	0-10	1-12	5-20	120-350	5-30	15-40	150-600

## Patient History and Clinical Course

June 09, after 18months of Rx therapy, which included Methotrexate 25 mg weekly, 20mg prednisone daily – she had just recently finished 6 days of methyl prednisone (IM) after a course of Embrel that had no effect. Her Rheumatologist was investigating Tocilizumab as the next course of action. Pathology indicies were WCC 11.2 (x10<sup>9</sup>/L), Platelets 1166 (x10<sup>9</sup>/L), ESR 123 (mm/h), CRP 129 (mg/L), Ferritin 156 (mg/L), Iron <5 (mmol/L), Trans Sat <9 (%), with high liver enzymes and a dimorphic blood film with hypochromic microcytic red cells. She was suffering with severe joint oedema , generalised pain and had been wheel chair bound for 2 months. Her parents were seeking alternate therapy as she was not improving and suffering for severe morbidity.

On examination Hemaview™ demonstrated similar features to the reported blood film with additional inflammatory indicators present. Rx treatment continued for 3 months but was reduced by the parents as positive signs of improvement were observed following daily FSM/INF therapy. Further monitoring with Hemaview™ agreed with pathology. On 17/12 she had been out of the wheel chair for 2 month, and been off all Rx, except for occasional Neurophen. Further naturopathic treatment was reduced except for FSM/INF and by July 2010, WCC was 7.2 (x10<sup>9</sup>/L), Platelets 418 (x10<sup>9</sup>/L), ESR 8 (mm/h), CRP 3 (mg/L), Ferritin 45 (mg/L), Iron 15 (mmol/L), Trans Sat 22(%), with reduced , but still significant, ALT ( 59) and AST (62) liver enzymes and improving red cells (MCV 76 fl) . She was riding her bike and participating in normal activities. Her social reclusion had completely disappeared and morbidity had declined . She was having physiotherapy and podiatry to rectify the abnormal leg bone development that had occurred during the previous 3 years. She is continuing to improve.

## Conclusions

In this case study of JRA, Hemaview and FSM were successfully combined to both monitor and improve outcomes. The use of specific radiofrequencies in OA and experimental RA have been shown in a few controlled and experimental studies to have benefit in reducing inflammation and improving outcome, Zizic etal, 1995: Crawford, 1991, and is a common therapy in natural medicine. It is being used at the PA hospital for improving bowel function in children with short Bowel Syndrome with success. This report further indicates that more research in the use of these naturopathic treatments should be investigated.

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Moorthy LN, Peterson MG,Hassett AL and Lehman TJ, 2010, Burden of childhood-onset arthritis, Jul 8;pp8:20.  
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4) W. G. Reilly<sup>1</sup>, V. E. Reeve<sup>2</sup>, C. Quinn<sup>3</sup>, C. McMakin<sup>4</sup> 2006, Anti-inflammatory effects of interferential frequency-specific applied microcurrent. , AHMR Congress Sydney, Abstract ID: ABSQ8-C3BLS-5CFK-SMCVN.1 Research and Development, Wellness Care Australia P/L, Copparoo, QLD, Australia 2 Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia 3 Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia 4 Frequency Specific Microcurrent Fibromyalgia and Myofascial Pain Clinic, Portland, OR, United States  
5) Crawford WH, Houge JC, Neirby DT, Di Mino A & Di Mino AA,1991, Pulsed radio frequency therapy of experimentally induced arthritis in ponies. Can J Vet Res. January; 55(1): 76-85.