‘Q Fever, Rickettsia and CFS’

Presented by Emeritus Professor Barrie Marmion

Saturday 12th May 2007
Disability Information Resource Centre (DIRC)
195 Gilles Street, Adelaide

Peter Cahalan (President of the ME/CFS Society SA) welcomed approximately 40 people to the first official seminar of the year; ‘Q Fever, Rickettsia and CFS’ presented by Emeritus Professor Barrie Marmion. It was noted that the 12th May is Florence Nightingale’s birthday, and ME/CFS awareness day. Also marking the occasion was a 10 minute segment on CFS, aired on JTV Friday 11th May. The segment is available for viewing on the society’s website or ABC website.

Peter encouraged all to continue distributing copies of the guidelines to their GP’s. Members were reminded that a copy of the guidelines can be obtained free of charge from the office, and additional copies are available at a cost of $2 for SA guidelines and $4 for Canadian guidelines (plus 50c postage for each).

Lorenzo Pizza (seminar organiser) thanked all for attending, and introduced Emeritus Professor Barrie Marmion, a world renowned researcher on Q Fever and Rickettsia.

Professor Marmion started by saying that although he is not an expert on CFS, his main focus has been the running of a Q Fever research group, aiming to find a vaccine. Q Fever is a disease that comes from cattle and goats, caused by a small bacterium that has to live inside a body of cells. Q Fever has been an incredible drain on mainly the farming and meat processing industries.

Trials of the vaccine were conducted in 4 South Australian abattoirs (where many people are affected). The research group kept hearing stories of people who ‘had Q Fever and never quite got over it’ or ‘recovered from it and then it started up again’. Conventional wisdom at the time was you fell ill with Q Fever then got over it; this was not true.
Professor Marmion presented an overhead transparency on signs and symptoms of Q Fever:

**Presentations of acute primary Q Fever**

<table>
<thead>
<tr>
<th>Systemic*</th>
<th>Organ based</th>
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</thead>
<tbody>
<tr>
<td>Fever</td>
<td>Lung/pleura</td>
</tr>
<tr>
<td>Headache</td>
<td>Liver (LFT↑) (Liver Function Test)</td>
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<tr>
<td>Sweats</td>
<td>Bone marrow (granuloma)</td>
</tr>
<tr>
<td>Myalgia</td>
<td>Brain</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>Ovary</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Testis/epidymis</td>
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*Cerebral dysfunction

*(cytokine, cascades: autoantibodies :thrombocytopenia)

So how does the organism grow? The organism itself isn’t toxic; signs and symptoms are caused by the immune system’s reaction to the organism, not the organism itself. As shown above, Q Fever systematic symptoms are similar to influenza. In order to make a diagnosis, a laboratory test is needed to detect which agents are involved.

The research group decided to look further into cases where abattoir workers had never gotten over the illness. These cases were people who had laboratory proven Q Fever in the past, and they were compared with those vaccinated against the illness, and those who were infected but never complained of symptoms.

Professor Marmion showed another overhead transparency detailing the above findings. The conclusion was that there may be something in what the patients were saying!

Another overhead was shown which compared people with Q Fever in the past with control subjects. The Q Fever patients showed symptoms including fatigue, a general feeling of illness, muscle pain and also muscle fasciculation (or twitches). This was the most discriminating feature.
Diminished ethanol use was also a feature; working in an abattoir is an unpleasant job, and alcohol use can increase as a result. However, with Q Fever, if alcohol is consumed an exaggerated hangover is experienced the next day. Night sweats were also a marked feature in patients with Q Fever in the past, compared with control subjects.

Constant re-exposure to the organism can have an effect; even if a person is immune to a 2nd clinical attack, re-exposure to the organism in the air can re-activate symptoms.

**Question:**

**An audience member asked if Rickettsia is a subgroup of Q Fever.**

Professor Marmion answered no, and that the two are genetically quite different even though they look the same in smears and slides and lead the same lifestyle. The clinical presentation of the two is also much the same.

**Question:**

**Another audience member asked how people who do not work in abattoirs contract the illness.**

Professor Marmion explained that the illness can be passed onto cats etc. At the end of animal pregnancy, Q Fever is contained in the placenta, and people can be infected by breathing in the air around the birth product. Those who work with stock and cattle are at increased risk; however not every herd is infected. When the infection becomes airborne, others are often exposed.

A group in Birmingham that was studied had the following story; right next to one of the motorways are extensive pastures, and the sheep all lamb around the same time. In this particular incident, high winds blew over the birthing sheep and 147 cases of Q Fever were recorded in a large ‘wedge’ surrounding the motorway.

An outbreak in Germany also occurred; an agricultural fair had ewes giving birth (so the children could observe) and 299 cases of Q Fever were found in those who had passed through the fair.

Therefore, the general population can be affected. Human to human infection is very rare. The primary way of infection is aerosol (from the placenta).
The research group thought the problem was the continuation of the acute phase cytokine responses, downsized (cytokine disregulation). They collected blood samples from those who had post Q Fever fatigue then simulated the samples with various antigens. The result was that people with post Q Fever fatigue syndrome had much more of one cytokine (IL1) than others. IL2 was downgraded and less efficient in these patients. It appeared that those with post Q Fever fatigue syndrome had hypersensitivity in their immune system.

The next thing the research group moved onto was the cause of the persistent cytokine disregulation. The theory was that it’s due to the organism itself; either still challenging the immune system as an antigen (even though organism dead) or the organism itself was still alive.

An overhead was shown:

Reappraisal of Coxiella burnett-host relationships – importance of persistent infection

Propositions

- Most humans or animals don’t completely clear coxiella after an infection
- Low level of infection is controlled to a varying degree by continuing cellular and humoral immune responses
- Recrudescence of persistent infection to a detectable clinical or cerebral (culture/PCR) may be induced by pregnancy, immunosuppression, or immunomodulation by the coxiella

The results of further study are that a large proportion of people with Q Fever had the organism present in their bone marrow. The research group then joined forces with a group in Birmingham. Studies showed that some people, 12 years after exposure, were still carrying the organism. The group then looked in the bone marrow and 10 of 12 tested returned positive results for the presence of products of the organism.

The question then was why were patients with continuing post Q Fever fatigue syndrome reacting differently to those who made a recovery? Genetic factors may be involved; 35% of patients with post Q Fever fatigue syndrome had a genetic marker compared with only 9% in the control group. It’s the host’s background which also determines the condition.
In conclusion, Professor Marmion said that in his opinion the illness has been greatly clouded by psychiatric opinions. Psychiatrists were focused on cerebral confusion and ignored other symptoms that make up the condition. We are swinging back to the notion that much of CFS is based on infection and the disposition of the host handles the infection in different ways.

Antibiotics as treatment don’t seem to work; this is a problem currently being battled; perhaps we are dealing with an organism that is not affected by antibiotics. Researchers need to find out what state the immune system is in, in those with post Q Fever fatigue syndrome. Professor Marmion finished by saying that post Q Fever fatigue syndrome is not a separate entity; it is all part of the same pathophysiological response in the body, linked to the original infection.

Peter Cahalan asked the audience who believed that Rickettsia or Q Fever are responsible for their illness. Approximately 7 people raised their hands. Professor Marmion continued to answer audience questions for 15 minutes, after which, he was presented with a bottle of wine from the Society as a token of thanks. Peter mentioned that Christine Hunter (of the Alison Hunter Memorial Foundation) had said a lot of research has come out of Adelaide, unheralded, by Professor Marmion.

Professor Marmion said he is now 87 and wants to retire! However a facility is being opened next week where the vaccine can be created (level 3 biocontainment facilities were needed), but we really need a reference and research centre. It was put to the audience that if anyone knows a friendly millionaire, perhaps they would like to donate to this cause!

Peter closed with some final comments:

- News from Dan Peterson (who presented at the forum in March) is that the Nevada Institute is now under threat from politicians. Supporters are urged to contribute in any way to the American CFS committee’s efforts to reverse this. Dan Peterson has also said that generally CFS societies around the world are focused on a support group model; this is great but the game is politics. Peter Cahalan mentioned that even if each member sends 1 letter a year to a politician that would equate to 310.
- MCS Reference Group; a form letter will be on the website directly for people to send to Tony Abbott.
Lorenzo Pizza drew the audience’s attention to the meeting program for 2007 available for download on the website. The next seminar is:

‘Alternative therapies’

**Presented by Tim White (Kinesiology) and Andrew Barrie (Bioresinance)**

**Saturday 7th July 2007 at 12:00 pm**  
**Disability Information Resource Centre (DIRC)**  
**195 Gilles Street, Adelaide**

The CFS committee is trying to vary its start times for the speakers this year based on feedback obtained from members. Please check all times and locations of meetings beforehand in case of changes. New members were encouraged to introduce themselves to members of the committee; the society is about being part of a community and not being isolated.

On that note, the meeting concluded, with participants staying for refreshments and conversation with others present. A very informative and enjoyable afternoon!