Reviewer's report

Title: Lemierre's syndrome and genetic polymorphisms: Case Report

Version: Date: 13 April 2006

Reviewer: Steven Opal

Reviewer's report:

General

Comments to Author

This is an interesting case report of a rare but well-described clinical syndrome of septic thrombophlebitis of the jugular vein with bacteremia and pulmonary nodules and infarcts secondary to Fusobacterium necrophorum. The authors describe a previously healthy, 17 year old woman who develops Lemierre’s syndrome and after a difficult ICU stay is successfully treated and recovers. The authors then proceed to do a SNP survey (single nucleotide polymorphisms) of immune response and thrombogenic gene loci. They define a common polymorphism in TLR5 as well as two potentially prothrombotic genotypes in the tissue factor promoter and the promoter for plasminogen activator inhibitor Type1. The authors speculate that these genetic polymorphisms may have predisposed this patient to develop Lemierre’s syndrome. This disease is infrequent but has profound implications for the small number of patients who develop this syndrome. It is tempting to consider that there may be a genetic basis for this predisposition. While the results of the genomic investigation are of interest, the authors may wish to consider the following comments.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Page 2, Abstract. Less common abbreviations such as TLR5, TF and PAI-1 should be written out when first mentioned and then abbreviations can be used throughout the rest of the manuscript. The phrase "17-year old girl"...perhaps should be changed to “17-year old woman” or “17-year old female.”

2. Page 3, second paragraph. The authors may wish to modify some of the terminology. A whooping cough is generally regarded as a term reserved for pertussis despite the fact that a whoop may occur in other diseases. Perhaps another term such as paroxysmal severe cough or some other term should be used in this situation. Additionally the term "erythematopultaceous pharyngitis" is not frequently used in common medical vernacular and another term should be used to describe the patient’s symptomatic pharyngitis.

3. Page 6, third paragraph. The authors make an interesting point that fusobacteria are non-flagellate and yet may have the genes for flagellin synthesis. Since TLR5 primarily responds to flagellin monomers and not fully assembled in bacterial flagella, it is possible that flagellin monomers may signal the host to infection from Fusobacterium species. Is there evidence that flagellin monomers are released in the supernatant or in the micro-environment of Fusobacterium species during growth? Is this gene expressed in vivo form this organism? This statement would
strengthen the argument that the TLR5 polymorphism plays a role in increasing susceptibility of this
patient to fusobacterium infection.

4. Page 10, Table 1. The abbreviations in this table should be listed and written out in full length in
the legend that follows Table 1 (e.g. MIF, SPD, FC-GR2 alpha, etc...).

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research
interests

Quality of written English: Needs some language corrections before being published

Statistical review: No

Declaration of competing interests:

'I declare that I have no competing interests"-SM Opal