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Diarrhea-Predominant Irritable Bowel Syndrome in Gulf War Veterans
2006-2010

Objective # 1: Estimate the burden of disease due to chronic gastrointestinal illness in PG veterans.

Objective # 2: Evaluate whether SBBO is associated with chronic diarrhea in PG veterans.

Objective: # 3: Determine whether eradication of SBBO reduces symptoms of chronic diarrhea, abdominal pain and bloating in PG veterans.

Results:

Prevalence of functional bowel disorders significantly increases during deployment and the high prevalence persists even after return. Duration of deployment is directly associated with prevalence of all bowel disorders after deployment.

IBS is common in Persian Gulf Veterans and is associated with reduced QOL. Most of the subjects who develop IBS during deployment continue to have symptoms after deployment.

Veterans who report gastroenteritis during deployment are more likely to develop irritable bowel syndrome, dyspepsia, nausea and vomiting. Acute gastroenteritis is a risk factor for the development of IBS and dyspepsia even after controlling for psychological disorders.

The prevalence of extra-intestinal disorders is high in GW veterans with IBS. Although IBS, dyspepsia, and chronic fatigue syndrome and medically unexplained symptoms commonly co-exist, they form separate clusters.

Hydrogen or methane lactulose breath test does not predict the presence of non-constipating-IBS in Gulf War Veterans. The utility of LBT, in this setting, for diagnosis of IBS requires critical evaluation.

Intraepithelial lymphocytes and mast cells are increased in Veterans with IBS consistent with the hypothesis that immune activation occurs in IBS following gastroenteritis.

With the use of state of the art DNA microarray method, both qualitative and quantitative alterations in the GI microflora of GW Veterans with IBS were found.

A comprehensive manuscript describing above findings is in development. The treatment part of the study is still in progress.

Probiotic (*Bifidobacterium infantis*) for Gulf War Illness

2010- (2012)

The overall objective is to determine whether *Bifidobacterium infantis* 35624 (Align®) will improve symptoms of GW illness (or chronic multisystem illness).

Specific Aims:

Aim # 1: Determine the efficacy of *B. infantis* 35624 in reducing symptoms of GW illness (chronic fatigue syndrome, fibromyalgia, joint pain, insomnia, general stiffness and headache).

Aim #2 Determine the efficacy of *B. infantis* 35624 on IBS symptoms in GW veterans.

Aim #3 Determine whether changes in gut flora and plasma cytokines correlate with treatment response in GW veterans.

Stool microflora and plasma pro- and anti-inflammatory cytokines will be measured before and after treatment.

We are in the process of obtaining IND (Investigation new drug) number from the FDA (Food and Drug Administration).