



## Departmental Seminar

### Vagus Nerve Stimulation for Treatment Resistant Depression: A 25 Years History



#### Prof. Ziad Nahas

Department of Psychiatry & Behavioral Sciences, Medical School  
University of Minnesota

5:00p.m. – 6:00p.m.

Room 1103-04, 11/F  
The Jockey Club Tower  
Centennial Campus  
The University of Hong Kong

#### About the talk:

Few treatments are available for individuals with marked treatment-resistant depression (TRD). The objective of the study is to evaluate the safety and effectiveness of FDA-approved adjunctive vagus nerve stimulation (VNS) in patients with marked TRD.

This 12-month, multicenter, double-blind, sham-controlled trial included 493 adults with marked treatment-resistant major depression who were randomized to active or no-stimulation sham VNS for 12 months. The primary outcome was percent time in response across months 3-12, with response defined as a  $\geq 50\%$  change from baseline on the Montgomery-Åsberg Depression Rating Scale (MADRS). Several secondary endpoints were evaluated. Overall, 88.4% of participants completed the trial. Percent time in MADRS response did not distinguish active from sham VNS. However, ratings from on-site clinicians (Clinical Global Inventory-Impression [CGI-I]), patients (Quick Inventory of Depressive Symptomology-Self Report [QIDS-SR]), and offsite masked raters (Quick Inventory of Depressive Symptomology-Clinician [QIDS-C]) revealed antidepressant benefits significantly favoring active VNS. Active VNS demonstrated significantly more percent time in response on the CGI-I ( $P = 0.004$ ) and QIDS-SR ( $P = 0.049$ ), and significantly more percent time in partial response (PR; symptom improvement  $\geq 30\%$ ) on the CGI-I ( $P < 0.001$ ) and QIDS-C ( $P = 0.006$ ) versus sham VNS. Active VNS exceeded sham VNS in rate of dyspnea ( $P = 0.035$ ), a known side effect of VNS. No new adverse events were identified.

In conclusion, percent time in MADRS response did not distinguish the treatment groups, but on multiple instruments time in response and PR showed a positive treatment effect. VNS was found safe and effective in participants with marked. These results along with others from this recent trials will be presented in the larger context of what we have learned about VNS and TRD for over 25 years.

#### About the speaker:

Professor Ziad Nahas is a Professor and Executive Vice Chair of the Department of Psychiatry and Behavioral Sciences at the University of Minnesota. His scientific interests lie in translational research of mood dysregulation and depressive disorders. He has a unique expertise in functional neuroimaging and brain stimulation across various modalities [Transcranial Magnetic Stimulation (TMS), Vagus Nerve Stimulation (VNS), Prefrontal Cortical Stimulation (PCS), Deep Brain Stimulation (DBS), Electroconvulsive Therapy (ECT) and Focally Electrically Administered Seizure Therapy (FEAST)]. He conducted basic research and collaborated on health economic studies.

#### Zoom Meeting (For participants who couldn't attend the Seminar in person)

<https://hku.zoom.us/j/6985555998?pwd=V05yTGJWNTIzazd2OFZ0Q3FReHVkdz09>

Meeting ID: 698 555 5998 | Password: Psyc

~ All are Welcome ~

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