Docket #: S22-428

Plasma Biomarkers of Vestibular Schwannoma

Stanford researchers in the Konstantina Stankovic Lab have developed a panel of blood biomarkers for vestibular schwannoma diagnosis and hearing loss monitoring associated with this intracranial tumor. Nine immune-related biomarkers (TNR-R2, MIF, CD30, MCP-3, IL-2R, BLC, TWEAK, eotaxin, S100B) make up the excellent discriminatory panel with 90.6% sensitivity and 75% specificity for diagnosing vestibular schwannoma (VS). Although histologically benign, VS causes hearing and balance loss, and can be life-threatening if left unchecked. Diagnosis and tumor management is monitored via lengthy and costly is contrast-enhanced MRI and may be insufficient to determine the ideal timing for tumor resection to prevent progressive hearing loss. Monitoring the Stankovic Lab panel of VS blood biomarkers is faster, safer, less expensive, and potentially more effective in determining treatment options, including whether and when to operate on a vestibular schwannoma to maximize the likelihood of hearing preservation and minimize the likelihood of hearing loss.

Stage of Development
Proof of Concept

Applications

- Customized multiplex **immunoassays for rapid patient screening and vestibular schwannoma monitoring**.

Advantages

- **Rapid**, **safe**, and potentially **more sensitive** molecular diagnosis and monitoring of vestibular Schwannoma compared to the 'gold-standard' MRI.

90.6% sensitivity and 75% specificity for diagnosing vestibular schwannoma.

Publications

- Vasilijic, S., Atai, N., Hyakusoku, H., Worthington, S., Ren, Y., Sagers, J. E., ... & Stankovic, K. M. (2023). Identification of Immune-Related Candidate Biomarkers in Plasma of Patients with Sporadic Vestibular Schwannoma. *bioRxiv*, 2023-01.

Patents

- Published Application: WO2024103000
- Published Application: 20260140117

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