

Introduction

The Covid-19 vaccination campaign is probably one of the most historic public hygiene measures in modern medicine. The drama of the pandemic has forced the scientific community to accelerate the development of vaccines, thereby enhancing the phases of active surveillance. Among the adverse events following immunization reported, those of an audiovestibular interest, such as sudden sensorineural hearing loss, tinnitus, dizziness, and vertigo, constitute a very small percentage. The research was conducted in the Audio-vestibular unit, Armed forces Medical complex in Alexandria. Study groups were evaluated pre and post vaccination dose of sputnik vaccine as regarding pure tone audiometry, Cervical VEMP, the Dizziness Handicap Inventory scale (physical, emotional, functional aspects and the total score) and Tinnitus Handicap Inventory. The rationale of this study is to assess the audiological and vestibular manifestations of patients with Meniere's disease (MD) before and after the booster dose of Covid-19 vaccine.

Aim of the Work

The aim of this study was to explore the association between Booster dose of COVID-19 vaccination and the progression of AV signs and symptoms in Meniere's disease patients.

Subjects And Methods

The study group included 20 patients (40 ears) with unilateral Definite Early stage Meniere's disease who received Sputnik Covid-19 vaccine. It was divided into two groups; group A, include 20 subjects before booster dose of sputnik vaccination and group B, include 20 subjects of subgroup A after booster dose of vaccination . Their age range from 20-60 years. Both study groups were evaluated as regarding pure tone audiometry and Cervical evoked myogenic potential. High frequency pure tone audiometry was done at frequencies range from 250 -8000 Hz using Interacoustics (AC 40 audiometry, Denmark). Cervical evoked myogenic potential was recorded on sternocleidomastiod muscle positive electrode montage using Interacoustics (Eclipse Evoked potential system, Denmark). Both study groups were evaluated pre and post booster dose vaccination as regarding Dizziness Handicap Inventory scale (physical, emotional, functional aspects and the total score) and Tinnitus Handicap Inventory score.

Results

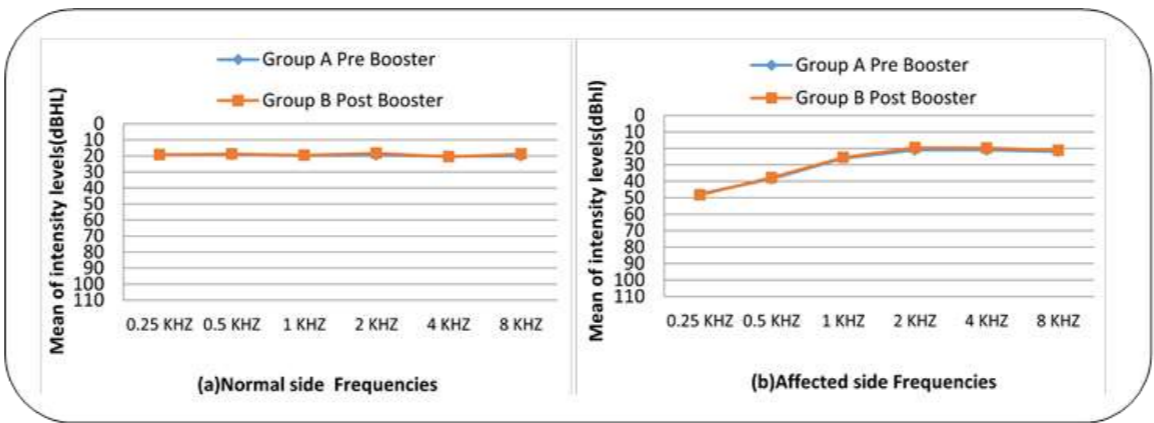


Figure 1: Mean of Pure tone audiometry (PTA) at all frequencies in normal and affected sides pre and post Booster dose vaccination

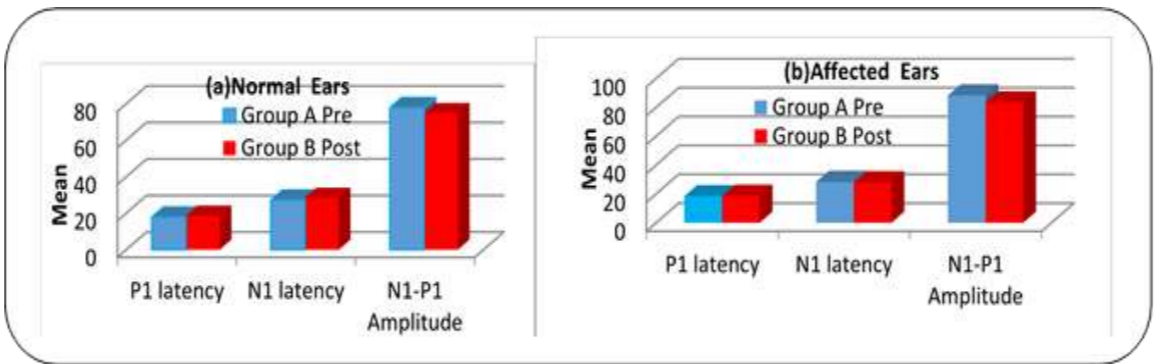


Figure 2: Mean of Cevcal VEMP parameters in norml and affected ears pre and post booster dose vaccination

Table 1: Mean and SD of Tinnitus Handicap Inventory pre and post booster dose vaccination

THI	Group A Pre Booster vaccination	Group B Post Booster vaccination	t test	P value
Mean±SD	20.10±1.37	22 ±2.07	2.229	0.012*

*: Statistically significant at p ≤ 0.05

Table 2: Mean and SD of Dizziness Handicap Inventory pre and post booster dose vaccination

Mean	Group A Pre Booster vaccination	Group B Post Booster vaccination	t test	P valu e
1-Functional DHI	6.6±1.84	7.2±1.50	1.86	>0.05
2-Emotional DHI	6.1±1.77	6.3±1.97	0.75	>0.05
3- Physical DHI	4.8±1.36	5.9±1.02	3.16	0.003*
4-Total DHI	17.60±3.08	19.4±2.83	2.03	0.034*

*: Statistically significant at p ≤ 0.05

Conclusion

1. No significant difference in PTA average, Speech Reception Threshold and Word Discrimination scores in MD patients post booster dose vaccination was found suggesting no evidence of an increased risk of audiological syptoms.
2. No significance difference in Cvemp parameters pre and post booster dose vaccination in MD patients suggesting no deterioration of vestibular affection.
3. Total Dizziness handicap inventory and Tinnitus handicap inventory score showed significant differences post booster dose vaccination in MD patients suggesting mild handicap.