



COVID-19 VACCINATION IN PATIENTS WITH PERSISTENT POST CONCUSSIVE SYMPTOMS (PPCS)

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Introduction

- ❖ With symptom sequelae similar to persistent post concussive symptoms (PPCS), COVID-19 infection may pose a concern to those recovering from PPCS. COVID-19 infection is characterized by acute symptoms including fever, malaise, and fatigue, and sometimes long-term symptoms of physical and mental fatigue.
- ❖ General, population-wide reactions to the COVID-19 vaccination: fever, malaise, and fatigue for 1-2 days post vaccination.
- ❖ PPCS including vestibular, visual, and cognitive symptoms can overlap with post vaccine reactions and relative contra indications.

Purpose

The purpose of this study is to identify the response and potential symptom exacerbation in patients with persistent post concussive symptoms (PPCS) who received COVID-19 vaccine while still recovering from mTBI.



Materials and Study Design

- ❖ Provide symptom questionnaire to patients with PPCS ages 8-81 at SPARCC Sports Medicine concussion clinic in Tucson, AZ

Hypothesis

We hypothesized that COVID-19 vaccination will not cause PPCS symptom exacerbation beyond expected post vaccine reaction in those still recovering from mTBI.



Patient Questionnaire

- ❖ Have you received the covid vaccine? (Y/N)
- ❖ Have you received a covid vaccine after your brain injury date? (Y/N)
- ❖ Which vaccine did you receive?
- ❖ Did you have any symptoms/reactions from the vaccine? (Y/N) If yes, what symptoms and how long did they last?
- ❖ Do you feel that the vaccine worsened your post concussive symptoms? (Y/N) If yes, what symptoms and how long did they last?
- ❖ Have you had a documented covid infection? (Y/N)
- ❖ Have you had a documented covid infection during the course of your concussion recovery? (Y/N)
- ❖ Do you feel that covid infection worsened your post concussive symptoms? (Y/N) If yes, which ones and how long did they last?

Figure 1: Vaccination Status of PPCS Patients

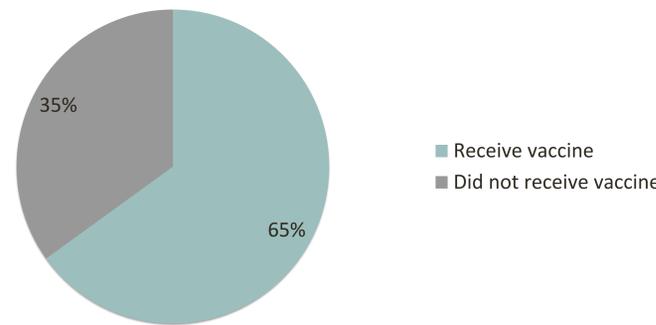


Figure 2: Type of Vaccine Received

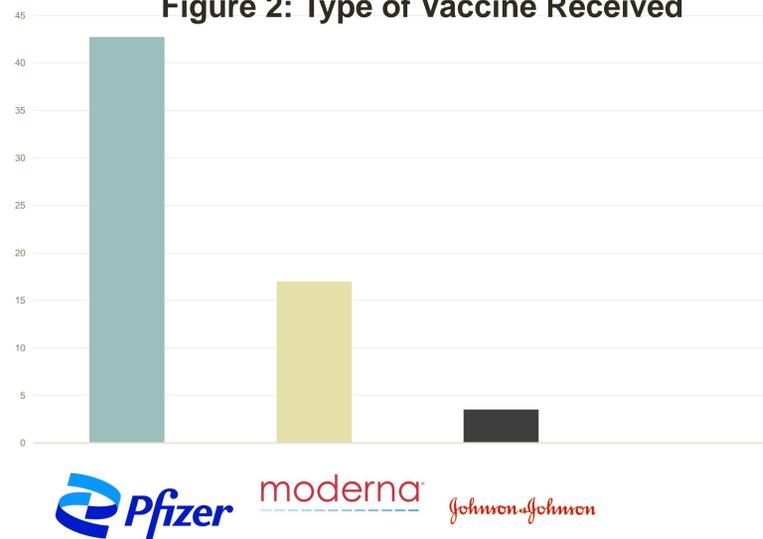
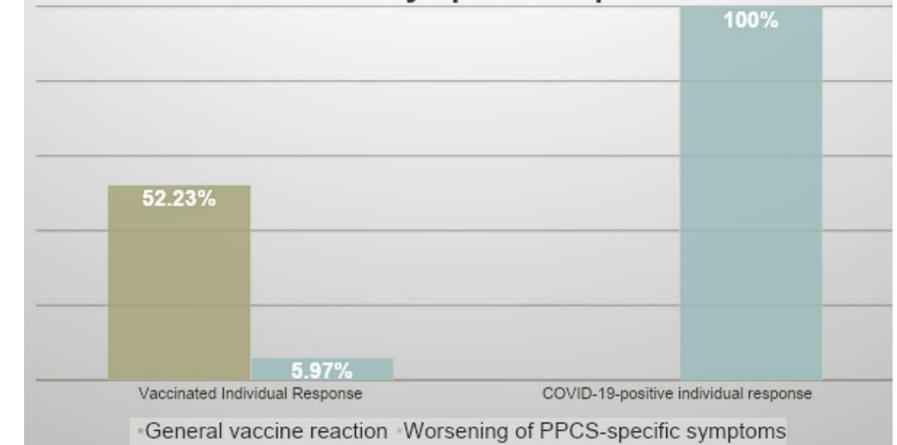


Figure 3: Vaccinated vs. Unvaccinated Individual Symptom Response



Results

- ❖ 65% of individuals with PPCS surveyed received a Covid vaccine
- ❖ 43% of patients received a Pfizer vaccine, 16.5% Moderna, and 3% J&J
- ❖ General vaccine reactions to the Covid vaccine (fever, malaise, fatigue) were experienced by 52.23% of PPCS patients.
- ❖ Only 4 patients (5.9%) experienced worsening of PPCS-specific symptoms (vestibular, visual, cognitive) following vaccination
- ❖ Of the 5 patients who contracted COVID-19 during mTBI recovery, 100% experienced worsening of PPCS-specific symptoms

Conclusion

- ❖ Although general reactions to the COVID-19 vaccine may be relatively common, they appear to resolve quickly. PPCS specific symptom aggravation was rare with vaccination (5.97%) but reported in 100% of PPCS patients who contracted covid infection.

Significance

Considering the risk of Covid infection, Long COVID and potential re-aggravation of PPCS, it appears that vaccination against COVID-19 is a worthwhile protective measure for these patients, without a large risk of PPCS recovery set back.