Evaluation of some biochemical markers in Pfizer-BioNTech vaccinated people

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Abstract---Background : The large spread of the Coronavirus is one of the dangers facing The world at the present time, which causes respiratory disorders .This new corona Virus is transmitted from human to human and has caused significant deaths in General ,which has led to the persistence of the pandemic . These verity of the Disease varies greatly from person to person .Forcing scientists to continue Research to discover a vaccine for this disease in in request to control and boundary the range Of the disease.The aim : This study was designed to hit upon out whether here are side effects on vaccinated people who received covid-19 vaccine or not by measuring the body's vitality by some of biochemical tests.Subjects:75 individuals between women and men aged(17-68 years)were enrolled in this study .Several biochemical tests were performed on them before taking the vaccine ,a week to10 days after the first dose, and a week to 10 days after the second dose of covid-19 vaccine. Results: All subjects in this Study received the Pfizer Bio N Tech vaccine and no systemic side effects were Observed in subjects vaccinated during the study period. Conclusions: From the Results of the current study, there were no abnormal biochemical markers, increased, or changes after receiving the Pfizer vaccine.

Keywords---Covid-19; Pfizer vaccine; kidney function, CBC.

Introduction

In the later ingredient of 2019, new pneumonia bags began to happen in Wuhan, China (Hubei province) (1,2). In January 2020, a new beta-coronavirus subtype in China was establish through peak throughput sequencing alongside with the employ of throat wash samples.(3). The earth Health concern (WHO) named this
coronavirus disease as “COVID-19” and affirmed it to be a considerable global endemic and broadcast health problem(4). According to the WHO data, as of first May 2020, over 3 million universal hand baggage had been confirmed, added than 20,000 deaths(5), although this virus affects several systems in animals, it commonly occurs in the structure of pneumonia in humans(6,7). However, mildly- and moderately-affected patients take a recovered prognosis, and milder symptoms. Yet, the prospects for brutal and key patients is indigent with anticyclone mortality rates(8). In these unsympathetic groups, mortality from acute respiratory distress syndrome and several organ fiasco canister be promptly observed. The overall coronavirus 2019 (COVID-19) deadly disease has caused far-reaching morbidity and mortality worldwide during the historical year. The introduction of novel vaccines seems at present to be changing the route of measures in a encouraging direction. by the side of with clear remuneration stemming out of jab programs in countless countries(9). helpful SARS-CoV-2 vaccines are fundamental for lowering disease severity, viral shedding and transmission, so assisting to organize the covid outbreaks. near are more than a few injection strategies against SARS-CoV, MERS-CoV examined in animals, together with a live attenuated virus, viral vectors, inactivated virus, subunit vaccines, recombinant DNA, and proteins vaccines [10].TCOVID-19 vaccines assist our our bodies stem protection to the virus that reasons COVID-19 without us having to acquire the infection. unique kinds of vaccines bring about in matchless approaches to grant protection. But with the complete kinds of vaccines, the majority is gone with a distribute of “memory” T-lymphocytes in surcharge to B-lymphocytes accordingly as to carry out in brainpower the road to combat that virus inside the destiny. COVID vaccine It typically takes a little weeks after jab for the build to make available T-lymphocytes and B-lymphocytes. Therefore, it is practical that a celebrity may be angry with the virus that reasons COVID-19 now before or scarcely after immunization after which cause poorly awaited to the detail the vaccine did currently not engage in plenty time to present protection. every so often after vaccination, the method of constructing imperviousness canister single-mindedness symptoms, counting fever. these symptoms are average and are secret language that the group is house immunity. nearby are three types of covid-19 vaccines until now: Viral Vector-based/COVISHIELD, mRNA ,Pfizer Ultra Frozen Vaccine, and Sinopharm. This study was aimed to acquire out whether nearby are side effects on vaccinated people who received covid-19 vaccine or not by measuring the body’s vitality by some of biochemical tests. This study is aimed at investigating the kidney function(urea ,uric acid ,creatine, and some of hematological parameters Disturbances in COVID-19 vaccinated Iraqi people.

Material and methods

The time of sample collecting was from October/2021 to march/2022. The total number of participants in the study was 75 individuals of Iraqi men and women vaccinated people, aged between (17-58) years old. Samples were collected at the Specialist Centre for vaccines.
Collection of Blood Sample

A sample of five milliliters from human blood were obtained from each subject before taking vaccine, 2ml of blood were put in anticoagulant tubes (EDTA) for cbc (complete blood count), 3ml put into gel-tube and separated by centrifugation at 3000 rpm for 15 minutes and the serum was then isolated and deposited at (-20 0C) until analyzed.2-five milliliters of human blood were obtained from each subject (one week to ten days after taking the first dose of vaccine),2ml of blood were put in anticoagulant tubes (EDTA) for cbc (complete blood count), 3ml put into gel-tube and separated by centrifugation at 3000 rpm for 15 minutes and the serum was then isolated and deposited at (-20 0C) until analyzed. Then, five milliliters of human blood were obtained from each subject (one week to ten days after taking the second dose of vaccine), 2ml of blood were put in anticoagulant tubes (EDTA) for cbc (complete blood count), 3ml put into gel-tube and separated by centrifugation at 3000 rpm for 15 minutes and the serum was then isolated and deposited at (-20 0C) until analyzed.

Statistical analysis

The data were analyzed using GraphPad Prism version 6 (11). Data are represented as mean ± SD (12).

Results & discussion

The biochemical analysis data including kidney function test (urea, uric acid, creatinine) and some of hematological analysis data including (RBC, Hb, PTL, PCV) were collected from COVID-19 vaccinated Iraqi people when routine blood screening tests were performed. In this study no significant changes were observed in subjects vaccinated during the study period as show in figures (1-7).

![Figure 1: Effect of Pfizer in Urea concentration. A, before taking vaccine dose. B, after taking first vaccine dose. C, after taking second vaccine dose](image-url)
Figure 2: Effect of Pfizer in Uric acid level. A, before taking vaccine dose. B, after taking first vaccine dose. C, after taking second vaccine dose.

Figure 3: Effect of Pfizer in Creatinine level. A, before taking vaccine dose. B, after taking first vaccine dose. C, after taking second vaccine dose.
Figure 4: Effect of Pfizer in RBCs count. A, before taking vaccine dose. B, after taking first vaccine dose. C, after taking second vaccine dose

Figure 5: Effect of Pfizer in Hemoglobin concentration. A, before taking vaccine dose. B, after taking first vaccine dose. C, after taking second vaccine dose
From the result of the current study, there were no abnormal biochemical markers, increased coagulation, or changes in basic body functions after receiving the Pfizer vaccine. Fluid and Electrolyte Disturbance in COVID-19. Impaired renal utility leads to fluid and electrolyte disturbances [13]. GI disorders be able to in addition be in charge of two fluid and electrolyte imbalances (the nearly all universal font is hypokalemia) [14]. Calculating fluid and electrolyte remainder involves more than a few processes in which the kidneys and GI swathe fool around an chief role. As a result, hurt to them largely disrupts fluids and electrolyte total [15]. Studies on COVID-19 strengthen electrolyte disorder in
patients, as well as sodium, potassium, chlorine, and calcium imbalances [16,17]. One of the a good number for all electrolyte disorders is hyponatremia, which occurs with a finely tuned peril of mortality in hospitalized patients [18]. In a study of covid19 patients the greater part of serum biochemical markers, together with Ca, Na, K, Albumin, PLT, PCV did not confirm noteworthy differences between awful and mild COVID-19 patients. The differences in and the spreading of the biomarker domino effect between acute and regular COVID-19 patients. Similarity never-ending diseases, calm with diabetes, hypertension, coronary main thing disease, lasting disorderly pulmonary disease, cerebrovascular disease, and persistent liver disease had elder frequencies in the mortality ring than in other groups. Of note, compared to the other groups, platelet, hemoglobin, PCV, leukocyte, neutrophil, NLR and SII values. In patients with dangerous test cost of covid19 patients, it was determine that platelet, leukocyte, neutrophil, NLR and SII ethics were higher, but hemoglobin was rest up to be lid in patients with constructive difficulty results. Also, hemoglobin was locate up to be major in gentleman patients who practiced specified for COVID-19 [19], SARS-CoV-2 has been made known to benefit from a direct cytopathic injury on lymphocytes, with a numeral of morphological changes seen on the peripheral blood degrade of infected patients [20]. Lymphopenia has nurture to be a promise of SARS-CoV-2 infection and is expound to a flexible boundary in just about altogether indicative patients. Here is in addition substantiation that the amount of lymphocyte matter lessening friends with disease severity [21]. A miserable eosinophil make a difference is a further marker of COVID-19 infection [22]. The grouping of lymphopenia and down eosinophil be important in a indicative continuing is a persuasive indicator of infection [23]. COVID-19 be gifted to be allied with liver injury during disease perk up and treatment, in patients with or without preexisting liver disease. prominent ideals of aspartate aminotransferase (AST), alanine aminotransferase (ALT) and bilirubin, and at a short down blunt albumin and pre albumin concentrations urge every and everyone been joined with poor outcome [24,25]. In addition, quite a lot of drugs second-hand in the big business of COVID-19 are coupled with the promotion of high-minded liver biomarkers [26,27]. For this reason, at a minimum, it is not required to administrator ALT, bilirubin and albumin during management of patients with hepatotoxic medications, and in people with pre-existing liver disease. All subject in this study received the Pfizer-BioNTech vaccine and no systemic side effects were observed in subjects vaccinated during the study period. From the result of the current study, there were no abnormal biochemical markers, increased coagulation, or changes in basic body functions after receiving the Pfizer vaccine. As shown in figures, which showed the differences in the measurement of vital signs between the different age subgroups, this table showed that there was no significant difference compared to the normal percentages. For kidney function test Albumin, CREA, urea and creatinine, and hematological parameters PLT, PCV, wbc, rbc, HB, This indicates that the vaccine does not cause side effects on the body’s vital indicators.

Conclusions

According to the results that obtained by the current study, it could conclude that no systemic side effects were observed in subjects vaccinated during the study period. From the result of the current study, there were no abnormal biochemical
markers, increased coagulation, or changes in basic body functions after receiving the Pfizer vaccine, which showed the differences in the measurement of vital signs between the different age subgroups, this table showed that there was no significant difference compared to the normal percentages. Kidney function (urea, uric acid, creatinine) and some of hematological analysis data including (RBC, Hb, PTL, PCV), This indicates that the vaccine does not cause side effects on the body’s vital indicators.

References


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