

Covid vaccination and increased blood pressure in hypertensive

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Aim: The aim of study is to evaluate in a population of hypertensives the finding of increased blood pressure values after Covid-19 vaccination.

Methods: we evaluated, in the period from March 2021 to March 2022, 637 patients suffering from arterial hypertension grade 2, treated with pharmacological and dietary therapy. Of these 402 (63%) underwent vaccination for SARS Cov-2 in the aforementioned period. Home blood pressure mean (HBPM) were as per ESC Guidelines $\leq 135/85$ mmHg in 197 patients only. Patients were vaccinated with BioNTech, Moderna and Johnson & Johnson.

Results: only 88 (44,6%) of the 197 patients did not experience significant changes in blood pressure values after all three doses of the vaccine. They presented with vague and nonspecific symptoms such as headache, nausea, dizziness and fatigue. In the remaining 109 blood pressure values controlled with the HBPM method were $\geq 160/90$ mmHg and $\leq 180/100$ mmHg in the three weeks following the administration of the first and

second doses. Symptoms such as marked headache, nausea, easy fatigue, difficulty breathing were also present in these patients. From the fourth week there was a slow but gradual decrease in blood pressure values until it returned to the target as per the Guidelines after the sixth week. After administration of the III dose there were no significant changes in blood pressure values by HBPM.

Conclusions: The spike proteins of the SARS-Cov-2 virus can bind to ACE2 receptors on cell membranes by degrading catalytic activity, acting on the renin-angiotensin system, increasing vasoconstriction and therefore blood pressure. Vaccines drive our bodies to produce morphologically identical spike proteins to viral ones to activate the immune system there is evidence that endogenous spike proteins may also cause increases in blood pressure [1].

References

1. F. Angeli (2022) Hypertension after Covid-19 Vaccination. *G Ital Cardiol (Rome)* 23:10-14.