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## Hypothesis: Factor XI Contents in Certain Types of COVID.19 Vaccine is The Cause of Sex-Dependent Clot

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**Abstract:** COVID.19 represent the biggest disaster faced human community from last years and up to the date, despite of huge effort exerted to give therapeutic or immunization protocols, most of these attempts facing unexpected health disorders resulted as outcomes of its implication. Certain types of COVID.19 vaccines, reported to cause thrombosis in rare condition, certainly among women in puberty period, hypothesis of using factor XI as one of the components of these types of immunization, beside high level of sex hormones, particularly estradiol, which is usually accompanied with high levels of IL-6, that induce production of more collagen, triggering platelets aggregation and activate coagulation cascade, and that may clinically lead to consequences similar to that caused by virus itself. Using IL-6 inhibitors such as Clazakizumab may lead to obtaining of vaccine safer than those used.

**Keywords:** COVID.19 vaccination trouble shootings, XI, IL-6, Clazakizumab, Thrombosis, Puberty.

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### HYPOTHESIS

Development of thrombosis after receiving COVID.19 vaccines, and severe consequences observed in few persons. Despite of it occurs rarely, but it causes brain storming to the overall medical research community. This abnormal coagulation phenomenon observed mainly among adult women. After several attempts to find the etiology of it, started from linkage between sex hormone and immune response, I find relation between estradiol and IL-6, then narrowing search on those biological factors, and they guide me to the possibility of presence of XI coagulation factor as one of the components of those types of COVID.19 vaccines reported to induce thrombosis.

Factor XI content of some types COVID.19 vaccine is the main cause of thrombosis complications occurs in adult women, due to high concentration of  $17\beta$ -estradiol, which lead to formation of negatively charged estradiol hemisuccinate (E2), which stimulate thrombin to alter factor XI to factor XI a.

Association of high levels of estradiol during female puberty with raise in IL-6 concentration may lead to production of collagen result in platelets

aggregations and triggering of coagulation cascade cause severe complications, as thromboplastin antecedent may activated by factor XII, and that may lead to severe consequences unless that person is factor IX deficient.



**Fig-1: A health care practitioner administered COVID.19 vaccine to a lady**

Substitution of factor XI with Clazakizumab may lead to vaccine safer than current one, due its inhibitory effects on IL-6.

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