

Overreaction to COVID-19: medical and political aspects

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Abstract

COVID-19 as a cause of death has been overestimated by some writers. Excessive anti-epidemic measures and lockdowns are harmful for the economy as well as for the public health. The irrational use of health resources interferes with the regular patient care. The socioeconomic damage in Western Europe and other welfare states is considerable. The question 'cui bono?' must be posed to clarify motives behind some COVID-related restrictive policies. In Russia, restrictions and suppression of individual tourism help to conceal voluntarism and corruption. Apparently, supervision and control measures are used to encroach upon civil liberties and to distract people from internal problems such as shortcomings of the healthcare. Apropos the military activities are even more efficient distractors from internal problems. Presumably, the increase in mortality from different causes will be ascribed to COVID-19, and subsequent mortality decrease - to "successful" anti-epidemic measures including vaccinations. The harm-benefit ratio of mass vaccinations is unclear. Both children and adults can mount immune response to SARS-CoV2 undergoing acceptably low risk. In future, the countries implementing strictest measures may find themselves with a weaker protection by natural immunity. Officially tested preparations are not necessarily always the same quality as those administered to the broad public. A winner of the "vaccine race" may end up in a mass vaccination of citizens with suboptimal vaccines.

Keywords: COVID-19, healthcare, vaccine

Introduction

COVID-19 as a cause of death has been overestimated and the role of co-morbidities undervalued [1]. "Died with COVID-19" is not the same as "died of COVID-19". In terms of years of life lost, in view of the advanced mean age of COVID-19 fatalities, the current pandemic will probably score similarly to the 1957 and 1968 influenza [2]. The effectiveness of travel restrictions and quarantines is questionable because SARS-CoV-2 is already spreading worldwide like influenza did in the past. Travel restrictions can curb the international spread only if immediate and total. Historical data suggest no change in the speed of flu spread despite the proliferation of travel and human contacts [3].

Excessive anti-epidemic measures and lockdowns are harmful for the economy as well as for the public health. The irrational use of health resources interferes with the regular patient care, especially of non-urgent outpatient activities. The long-term social distancing has detrimental effects on physical and mental health, in particular, of elderly and handicapped people, contributes to loneliness and depression [4-6]. The socioeconomic damage in Western Europe and other welfare states is considerable [7]. The question ‘cui bono?’ must be posed to clarify motives behind some COVID-related restrictive policies [8]. The undermining of globalization is another nail in the coffin of freedom and human rights.

The topic is inflated and mixed with politics. This is not automatically unfavorable: more order is needed in our age of overpopulation and mass migrations. However, these problems should be openly addressed [9] instead of using pandemics as a pretext for the tightening of screws. In Russia, restrictions and suppression of individual tourism help to conceal voluntarism and corruption [8]. The matter is obfuscated by lack of trust in the official statistics [10]. Apparently, supervision and control measures are used to encroach upon civil liberties and to distract people from internal problems such as shortcomings of the healthcare system [11]. Apropos certain military activities are even more efficient distractors from internal problems. Along the same lines, at the Politburo meeting (January 25, 2020) in China it was proclaimed that “all infected will be concentrated in designated containment facilities; all those who had contacts (with the infected) will be placed in home quarantine.” With these orders from the highest authority, the regime mobilized to contain COVID-19 while maintaining the “iron grip on society” [12]. Presumably, the increase in mortality from different causes will be ascribed to COVID-19, and subsequent mortality decrease - to “successful” anti-epidemic measures including vaccinations.

Mass vaccinations: potential adverse effects

The use of new vaccines entails known and unknown risks. There have been reports on moderate-to-severe side effects of SARS-CoV-2 vaccines [13]. In particular, some of them induce thrombotic thrombocytopenia. Cases of facial palsy and transverse myelitis have been documented [13-15]. Statistics are of questionable reliability; adverse effects may be overlooked, ascribed to other causes or obfuscated to comply with policies [16-19]. Results of surveys may be biased. Owing to the “social desirability” effect, some respondents would report what they perceive as officially or unofficially commendable. The social desirability effect has been observed also in conditions of anonymity [20]. Apparently, some scientific writers conform to the same principle: the rarity of reports on the side effects of COVID-19 vaccinations may be caused by policies discouraging such reporting. In view of the abundance of unreliable data, the role of theoretic argumentation increases.

An overlap between pathogenetic mechanisms of coronavirus infection and vaccination is related to the spike protein (SP). It can be reasonably assumed that effects of SP observed in COVID-19 would occur to some extent also after administration of vaccines containing SP or inducing its synthesis in the body. The SARS-CoV-2 virus uses ACE2 as a receptor, which may cause angiotensin-II-mediated tissue injury. SP binds to ACE2 receptors on platelets and is presented to the immune system potentially triggering autoimmunity [21]. The downregulation of angiotensin-converting enzyme 2 (ACE2) by SP can lead to endothelial damage [22,23]. The latter together with platelet activation results in coagulopathy culminating in vaccine-induced thrombotic thrombocytopenia [24].

Blood clotting derangements may be caused not only by SP but also by adenoviral vectors in vaccines. There is evidence of synergism between SP and adenoviral vectors [25]. The vectors elicit a cellular and humoral immune response, bind to circulating platelets, induce platelet activation and aggregation. Adenoviral-vectored vaccines may cause autoimmunity with autoantibodies to the Platelet Factor-4 (PF4). The chain of events includes microvascular damage, platelet activation, adenoviral vector dispersal, release of PF4, autoimmunity and vaccine-associated immunothrombosis [22]. The above mechanisms underlie the association of adenoviral vector-based COVID-19 vaccines with cerebral events such as venous sinus thrombosis, ischemic and hemorrhagic stroke as well as splanchnic vein thrombosis, pulmonary embolism and disseminated intravascular coagulation [13,15,25,26]. Moreover, SP binds to T cell receptors thus enhancing immune reactions [27,28]. Endothelial cells bearing SP or other viral antigens can be attacked by the host immune system. In the brain it may result in vasculitis and perivascular encephalitis. Among cases with postvaccinal thromboembolism predominated younger females known to be more susceptible to certain autoimmune conditions [22,29,30]. Encephalitis after the use of adenoviral vector vaccines has been documented; subclinical cases must be more frequent considering headache as a typical postvaccinal symptom. Of note, encephalitis developed much more frequently after the use of adenoviral vector than after mRNA vaccines: 79 cases in 99.3 million doses vs. 20 cases in 110.6 (p<0.001) [31]. Neurological side effects of SARS-CoV-2 vaccinations are usually mild; however, some cases were severe, required hospitalization and admission to intensive care units [13].

Furthermore, more cases of myo- and pericarditis than expected have been recorded after COVID-19 vaccinations. The supposed mechanism is immune response with inflammatory reactions to SP or SP-coding nucleic acids [15,32]. In a population-based cohort study (subjects vaccinated by mRNA-based vaccine vs. controls, ~885,000 people in each cohort), the vaccination was associated with an increased risk of myocarditis: the risk ratio was estimated at

3.24 ($p < 0.05$) [33]. In a group of individuals aged 12-39 years, who had recently received a second dose of mRNA-based COVID-19 vaccine, the rate ratio for myocarditis was 10.8 compared to the general population (95% CI 3.2 to 49.0) [34]. Symptoms of myocarditis usually start 2-4 days post-vaccination being more frequent after the second dose of mRNA vaccines. Chest pain was present in all patients; 67% of them had fever. Heart failure and arrhythmias were observed as well [35]. In another study, myalgia was encountered in 21% of athletes after the first dose of an mRNA-based vaccine and in 37% following a second dose [36]. Finally, SP has been demonstrated in vitro to penetrate the cell nucleus and inhibit DNA repair [37]. This may have long-term consequences to be studied in future.

Discussion and conclusion

Effects of SP, observed in COVID-19 patients, can to some extent appear after administration of vaccines containing SP or inducing its synthesis by the body. In addition, adverse events after vaccinations may be caused by adenoviral vectors, other components and contaminations in vaccines, which may depend on the manufacturing quality. Blood clotting disorders are of particular importance [38,39]. A promising research direction would be experiments in animal models [40] and human volunteers using various vaccines, comparing with controls the levels of blood clotting (e.g. D-dimer) and other markers. The D-dimer level is usually high in patients with postvaccinal clotting disorders [24,41].

The harm-benefit ratio of mass vaccination with different vaccines remains unclear. Healthcare providers should be vigilant for side events after COVID-19 vaccinations; further research especially of long-term risks is needed [42]. Both children and adults can mount immune response to SARS-CoV2 undergoing acceptably low risk. There is an opinion that it is unethical to impede the access to natural immunity [43]. A recent systematic review demonstrated that natural immunity in individuals recovering from COVID-19 is comparable to the protection by complete vaccination of naïve people, with the possibility of enhanced durability of protection from natural immunity [44]; more details are in [45]. In future, the countries implementing strictest measures may find themselves with a weaker protection by natural immunity. The vaccine quality e.g. undeclared components are of importance for the risk of side effects. In addition to adenoviral vectors, vaccines may contain various substances of human and viral origin, protein and other contaminants [22,25]. Officially tested preparations are not necessarily always the same quality as those administered to the broad public. Political pressures for rapid approval of vaccines may result in distribution of preparations of unstable quality [46]. A winner of “the race for a vaccine against SARS-CoV-2” [47] may end up in a mass vaccination with suboptimal vaccines. There have been few reports from Russia about blood clotting-related,

cardiovascular and other adverse events after injections of Gam-COVID-Vac and other vaccines [16,17,41]. The number of unreported/undetected cases is unknown. The documentation reliability of side effects remains questionable, as it has been the case with some other medical statistics in Russia [16-19]. On the other hand, reports on side effects of renowned vaccines do not necessarily imply higher risks but indicate that they are better studied. There are perspectives to eliminate some side effects by development of synthetic mono-antigenic vaccines [47].

Abbreviations

SP: spike protein;

ACE2: angiotensin converting enzyme 2;

PF4: platelet factor-4; CI: confidence interval;

mRNA: messenger ribonucleic acid.

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