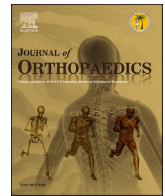


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Editorial

What is the difference between the first and the second/third wave of Covid-19? – German perspective



ABSTRACT

Now it has been more than 12 months since the first cases of the new Corona virus variant SARS Cov 2 have been detected in China. The first wave of the pandemic hit a lot of countries hard and many patients died. Not enough specialized equipment and limited knowledge of the disease added to the severity of this first phase. We all learned from our mistakes made during this first wave of the pandemic and due to that the confidence to be able to manage the second wave a lot better was high. Nevertheless, much higher infection numbers, more patients in ICUs and in some countries also more deaths were seen during the second wave. In this editorial we will describe the differences between the first and second wave from a European-German perspective and look at the impact it had on different parts of our lives. In general, some shortcomings were relatively easy to prevent from happening again. Basic equipment such as face masks, FFP2 masks and disinfectant is not an issue anymore. The respective political systems have solved that problem. Some countries also have learned from the first wave that prevention is the only option to reduce patient numbers hitting the hospitals and especially the ICUs.

Due to those facts, most of the European countries now thought they could deal with higher infection numbers. This, however, was an erroneous belief. Theoretical constructs such as a “Lockdown light” have failed to prove successful. Finally, only a hard Lockdown can bring down numbers sufficiently.

In Hospitals, the experience from the first wave helped to treat patients more effectively, leading to an improved infection number/death ratio. However, the political decision to react slow and sometimes only in increments and not with full force led to a huge increase in patient numbers and consecutively soaring numbers of cases needing treatment in hospitals and ICUs. While some countries managed this second wave a lot better than the first, Germany for example did not. Meanwhile more than 20 000 deaths compared to less than 10 000 in the entire first wave is a sure indication and it was certainly not caused by the medical performance in Hospitals being poorer the second time around.

For Orthopaedic surgeons, the second wave led to the same restrictions as the first one. Again, they became part of the interdisciplinary COVID-19 teams on the wards and again, the numbers of elective surgeries plummeted dramatically. Financial consequences will remain throughout 2021.

The second wave was a hard test for society, particularly as it hit its peak around Christmas time. Contact restrictions, closed hotels, forbidden fireworks at New Year all that is a challenge in particular for the younger people in the societies. All those restrictions, however, can never be an excuse for people delivering abstruse theories via social media or during demonstrations. Scientists all over the world deliver reliable information, these are the people to trust - they are the only experts. Some of them also successfully developed what we all hoped for – a vaccine. Although vaccination started some days back, it will take at least until autumn 2021 to have our normal lives back. Hopefully we all learned a lesson.

1. General aspects

Meanwhile it has been more than a year that the first COVID-19 infections occurred in China and weeks later spread all over the world. Recently,¹ published data that the first infections probably occurred in Italy in Sep. 2019, 2–3 months before the pandemic started in Wuhan. The first wave heavily affected almost every corner of this planet, although due to differences in seasons, the southern hemisphere was affected later, however, not less severe. Interestingly and luckily enough Africa, except South Africa, showed only low incidences and low death rates. Maybe the experience from Ebola infections some years before helped to minimize the problem,² and the lower average age was an additional beneficial factor.

Besides the medical problems of this pandemic, the effect on the economies of the different societies was enormous, leading to a steep decline in production of various goods. The consequence was an increase of unemployment rates and additional social problems (e.g. violence within families). This dramatic impact on society led more and

more politicians in many European countries to change their priorities after the first wave faded away. Due to minimal infection numbers during the summer months and the additional phenomenon that in that time mainly young people were infected leaving hospitals almost empty, some parts of society thought the pandemic was over, ignoring the early announcement of the oncoming second wave. Just as other viruses such as influenza blaze up seasonally, COVID-19 returned as expected in autumn. The second wave came, and as predicted by multiple experts with a much higher force than the first one. Something we should have remembered from the Spanish flu almost hundred years ago.³ As another expected development, meanwhile new variants of the virus appeared leading to a higher risk of infection and probably due to that to an increased number of patients on ICUs.⁴

However, different factors prevented an in-time reaction in most of the European countries. In particular Germany, which managed the first wave extremely well, now struggled. Reason for that was the changed priorities of the politicians. The economy was now first on the list, keeping businesses open instead of strictly reducing contacts, infections

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and death rates. In Germany, due to the democratic system with regional autonomy of state governments, it took the politicians long to find a coordinated and adequate answer to the rising numbers. Still believing that the new numbers could be managed with minimal restrictions a so-called “lockdown-light” was implemented in the beginning of December. During that period, a lot of valuable time was lost and the high numbers occurring in neighbouring countries were equalled in a bad way. Since mid of December everybody (except for some lateral thinkers) understood that only strict regulations can reduce infection rates and deaths, and this became first priority again. Being successful economically and medically at the same time is an equation that so far cannot be solved. We had to painfully learn that it is one or the other. Leading to a long existing statement that is correct in a lot of aspects, but especially in this pandemic: “Prevention is better than cure”.⁵

2. Hospital view

As mentioned above, during summer time life in a lot of societies returned to semblance of normalcy. The numbers of COVID-19 infections declined to a 7 day-incidence of far below 50 and the numbers of COVID-19 patients in hospitals also dropped down to almost zero. Life in hospitals returned to almost normal, the typical diagnoses were treated, the numbers of surgeries rose to almost pre-pandemic levels again.

While in Germany, in the beginning of October only around 400 patients with COVID-19 were hospitalised in ICUs and approximately 10 patients died due to or with the disease per day, these numbers constantly climbed over the following weeks. Meanwhile, at the beginning of November around 2000 patients were in need of ICU-treatment and 100 per day died, now at the end of December, more than 5500 patients are hospitalised in ICU beds and up to 1000 patients die per day. This is a lot more compared to the highest numbers during the first wave (3000 patients in ICU). Another number to demonstrate the impact of the second compared to the first wave is the number of deaths. During the time between March and October it summed up to around 9000 deaths in Germany, but in last 10–12 weeks more than 20 000 people died already. Additionally, it has to be stated that this increase happened, although therapy protocols were improved with knowledge gained from the first wave.

The key factor of this pandemic was and still is the numbers of infections per day. While during peak time of the first wave this number was around 5000–6000 in Germany, meanwhile it is more than 30 000 per day. Even if the percentage of younger patients is a bit higher now and the outcome (the number of deaths compared to hospitalised patients) overall is better, the sheer number of patients and the load in all ICU units during the last weeks is so high that most of the doctors and nurses are at or already over their limits. Another problem that increases is the fact that nurses and doctors are still at risk for infection although safety protection is not an issue anymore as it was in some parts during the first wave. The third very discouraging factor is the fact that the season for the disease will not end before April. This can be another reason for the huge number of burnouts and depressions among health care workers (Lim et al., 2020)⁶.

Due to those high numbers, the specialized teams are meanwhile supported by non-specialists, such as trauma surgeons, dermatologists and so on. This is another sure sign of an overstraining of the health care system.

All these problems are due to hesitant and inappropriate political decisions, confusing articles from the media and other non-scientific news. In addition to an inadequate reaction in preventing the second wave, politicians in Germany meanwhile have completely forgotten their hospitals not only from a medical but also from an economic point of view. No adequate compensatory payment is in place, leading to the pressing problem that some hospitals will not be able to pay their staff in January and two thirds of all hospitals are deeply in the red digits.

3. Orthopaedic Surgeons view

In the time between the first and second wave (June–October), the numbers of elective surgeries have reached values almost equal to previous years. In some hospitals and fields of orthopaedic surgery even a catch-up effect was noticed. This ended abruptly with the rising numbers of COVID-19 infections, although this time the elective units remained mostly open as per the politicians’ decision. This time a larger percentage of patients themselves cancelled their appointments and surgeries. This led to a drop in numbers from December on down to around 70%.

A second huge difference compared to the first wave is the fact that doctors and nurses from elective units are now required to support the COVID-19 units in Germany, too. This process is organised by local interdisciplinary medical teams. The new field of interdisciplinary work for Orthopaedic Surgeons is not really leading to an increased treatment quality for COVID-19 patients and therefore it should have been prevented as long and as effective as possible. That this problem would come up was very obvious, and based on the experience other heavily affected countries have made during the first wave, it also should have been prevented.

Patients fear of getting infected and the high number of infected patients will have a huge impact on elective Orthopaedic Surgery units over the next months. The number of surgeries will stay low throughout January and the following months until the seasonal effect will lower the numbers of COVID-19 patients and until a sufficient number of team members and patients are vaccinated. Probably in autumn 2021 a larger catch-up effect will be seen in elective arthroplasty centres.

4. Society view

No other topic worldwide was more intensively discussed throughout 2020 than COVID-19. Based on perspectives and quality of information, different solutions were propagated. The promising Swedish solution, which came with a lot less restrictions during the first wave, failed completely during the second wave. Due to the high number of deaths during the first wave and the high incidence at the beginning of the second wave, the Swedish government decided on a hard lockdown from December on. The US solution, was more a chaos than a strategy and caused more than 370 000 deaths so far.

On the other hand, strict regulations and continuity in the course of action could be seen in a lot of South-East Asian countries and New Zealand/Australia. This led to relatively low numbers of patients and deaths. Of course, with the limitation that the economies were more severely affected, except for China.

Democratic systems are trying to motivate their people to follow a recommended path, however all kinds of negative commentaries up to demonstrations are allowed. Which is an indisputable part of a strong democracy, however sometimes it is confusing for a lot of people living with it. In the second wave, scientists were less audible than during the first wave, leaving space for a lot of other individuals trying to further their specific interests. However, you can not bargain with the virus. There are strict scientific rules to follow.

Vaccination has started in Germany and other EU countries in the past days, however it will take months until relevant parts of the societies will be vaccinated. Until then all regulations will stay in place to balance the numbers of patients and the effects on the economy. Only after vaccination of 60–70% of all people is performed, societies will be able to return to a more normal life with travelling, social events and contacts. This perspective has such an exorbitant impact on our lives that hopefully the majority of people in Germany and worldwide will get vaccinated. However, again a lot of crude theories lead to hesitation in some parts of the society, in particular in those that have no access to or limited understanding of scientific facts.

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