Medical Journal of Virtual Science

Silja Guski, Stephan Borkenfeld, Norbert Rottmann, Fang Wei-Kleiner, Gian Kayser, Klaus Kayser Medical Journal of Virtual Science 2022 2:1 ISSN 2747-8920
DOI: http://dx.doi.org/10.17629/www.medical-journal-of-virtual-science.de-2022-2:1

Research

Principles of Virus pandemics – obtained lesions in different levels of structure and function in COVID 19 pandemics in Germany, 2020-2022

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Abstract:

Aims: To describe and to analyze structure and function lesions induced by COVID-19 pandemics in Germany (2020 – 2022) at different involved levels.

Material and Methods: The officially published number of infected persons, incidence and number of corona – associated deaths in the Federal Republic of Germany during the period February 2020 – January 2022 underwent thorough verification and during the period February 28, 2020 – March 15, 2021 detailed computation in relation to the involved public health center, and consistency of data. Shannon entropy and structural (MST) entropy were derived from these data and associated with the health center's location, covered population and week of publication. Python programs and self - written programs based upon DIAS (Digital Image Analysis Software (1)) served for information analysis of the COVID pandemics. These data display with the damages of social structures and behavior (function) such as demonstrations, violence, overload of public health services and commercial deficits.

The next lower level includes artificial aspiration, pulmonary dysfunction, severe lung edema, and damages of the air-blood barrier which contribute to malfunction (individual

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death) of infected persons. The lowest level describes the adhesion, implementation and spread of virus particles (infection of airways), and the consecutives in behavior and damage of exposed societies. Virtual slides (VS) at microscopic level are used to demonstrate the most significant post mortal anatomic findings.

Results: A total of 2,444,615 infected persons were included in the computation, and 70,104 persons died because of or in association with the infection. Distance analysis between the different health centers revealed a time delay of 10 weeks of potential virus jump between the centers. The 'hot spots' of the pandemics were associated with the distance of the health centers from the republic boundaries to its neighboring countries. No association of spread velocity and death rate was found with the size of the health centers' community and their environment (big cities, rural towns, etc.).

The lowest level of structure alterations includes virus load associated increased mucus production and dysfunction of ciliated cells in the air conducting system and vital damages of alveolar lining cells (pneumocytes). The activated pulmonary defense system destroys and occludes the pulmonary capillaries. The blocked essential air exchange induces a lethal and often irreversible lung edema.

The cause of pandemic associated deaths can only be definitely evaluated from autopsy and not from the officially published mortality data. A complete pulmonary failure is rather rare, in contrast to cardiac malfunction induced by age – related burden of pre-existent pulmonary damages.

Interpretation: The well-known COVID pandemics infectious spread conditions namely distance between 'spreaders' and potential (non-immunized) 'receivers' as well as Virus particle density and transmission conditions correspond to essential life conditions of human societies in general (2-8). Communication and transportation (mobility) are essential conditions of modern societies. Their modifications, limitations or shut down severely violates next higher order structures such as supply, mobility or labor of populations (9-13). This 'level of orders' effect can, in addition, exemplarily noted in high incidence and the accelerated Virus spread at the country's borders. Basic laws of kinetics predict citizen resistance including break outs of violence and intensive protests. They are independent from the political system and, in general cannot be avoided (14-19).

The presented model of different 'affected orders of life structures' by virus pandemics can explain the difficulties which democratically or otherwise organized societies are confronted to successfully protect their populations.

Keywords: COVID pandemics, Federal Republic of Germany, Shannon entropy, structural (MST) entropy, incidence, death rate.

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Introduction

Man like all living elements present with constantly organized hierarchic life structures which are connected to each other by functions (20-24). They can be arranged in 'vertical' and 'horizontal' planes, and are usually bound together by feedback mechanisms (19).

These constructions conform to a balanced equilibrium and can be projected in graphs. The vertices correspond to structures (objects) and the edges to functions (object features) (19). Each level consists of a system which possesses upper and lower boundaries which assure the systems equilibrium (19, 20, 25-28).

Feedback regulations abrupt turn into a feed forward system (break down), if lower or upper boundaries are passed (29, 30). It should be noted, that the terms structure and function are of the same nature and are strictly related to the order's level and observation period of an extern observer or existence of a connected order (31).

Nature has realized different orders of structures in man (21, 23, 32). The lowest level might include small 'bricks' (macromolecules, DNA, genes,..), connected to the level of cells, followed by that of nerves, vessels, glands, then building surfaced organs like lungs, liver, muscles, brain, creating individual persons, and finally societies, unions, worships, states, etc. The principal realization of the 'order of structures' idea is depicted in

Figure 1

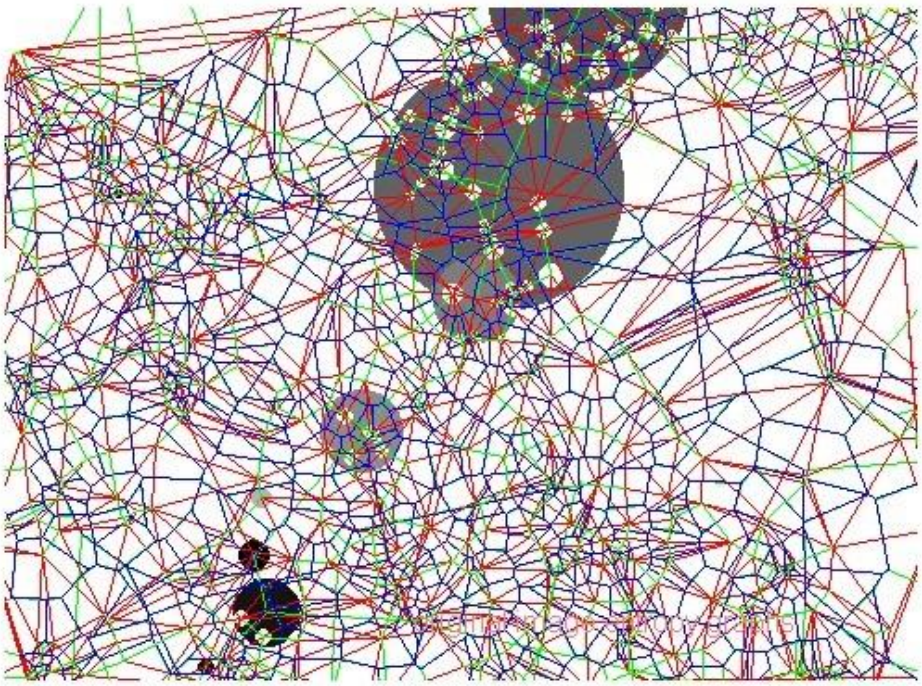

Figure 1:
Scheme of orders of biological structures in tuberculosis lung parenchyma. The histologic image is segmented according to different entropy levels (boundaries are displayed with different colors. In addition concentrations of entropy (dark circles) are equivalent to structures of different 'ages'.

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The stability of such a living system is guaranteed by internal feedback forces, which require constant boundaries or upper and lower limitations of included structures and functions (19) which remain constant or might change during the observation period (19).

Exceeding the upper or falling below the lower existent limit induce instability and consecutively the systems break down (33).

Dependent upon the extent of disturbances local repair might occur and stabilize the equilibrium (19). 'Repair' of the involved compartments has to be triggered from their surroundings or outside (19). 'Stabilization' often has to 'sacrifice' 'function', and might expose in scars (34).

Severe damage might expand into neighboring orders and levels, especially if similar compartments are involved. Involved systems usually possess sufficient 'reserves' for re-stabilization, if the damage is limited to the same 'horizontal' level.

It is endangered to break if additional vertical planes (higher order structures) are included (19). Herein, the amount of damage might become irreversible, and the system as a whole will break down (die) (19).

Modern medicine has recognized that different body compartments possess different degrees of 'vulnerability'. Therefore, they are of different importance for maintaining an individual person's health.

The delay of a person's death after severe damages of an internal organ (body compartment) is related to the organ's functional significance. It differs to a large range, from 'nearly immediately' in heart and cardiovascular disturbances to several days, weeks or months in kidney or liver dysfunction (33).

Therefore, the period between infection and death might become a more precise measure of Corona – associated death when compared to the usual distinction between death 'with' and death 'because of' Corona (35, 36).

A different proposal to more explicitly document the cause of death could be a 'targeted' description, such as to investigate in the contribution of artificial ventilation, amount of oxygen and preexisting pulmonary scars, emphysema, or cardiac damages.

Virtual slides (whole microscope images, VS) are a useful instrument to search in COVID virus infected lungs for residuals of previous pulmonary damages (scars, tumorlets, bronchiectasis, emphysema, foreign body deposits, etc.) and, in addition, to visualize findings of complete malfunction of the blood air barrier, and to demonstrate the practice to analyze the 'cause of COVID – deaths' more in detail. We herein invite the reader to try this unique technology. Sophisticated image analysis systems might be used to quantify visualized lesions (1).

Basic SARS-CoV-2 virus data

COVID pandemics is a disease induced by an enveloped virus with a positive-sense single-stranded RNA genome and a nucleocapsid of helical symmetry. Its genome has a size of 26 - 32 kilobases. The name Corona derives from electron microscope images reminiscent of solar coronas. It was first identified in Wuhan, China, December 2019. At present, it includes

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four different main strains which multiply within the lowest biological structures in our body, i.e., compartments of cellular membranes and genetic material of the upper and lower airways epithelial cells, as exemplarily demonstrated in <Figure 2> (2,19,37-39).

Figure 2

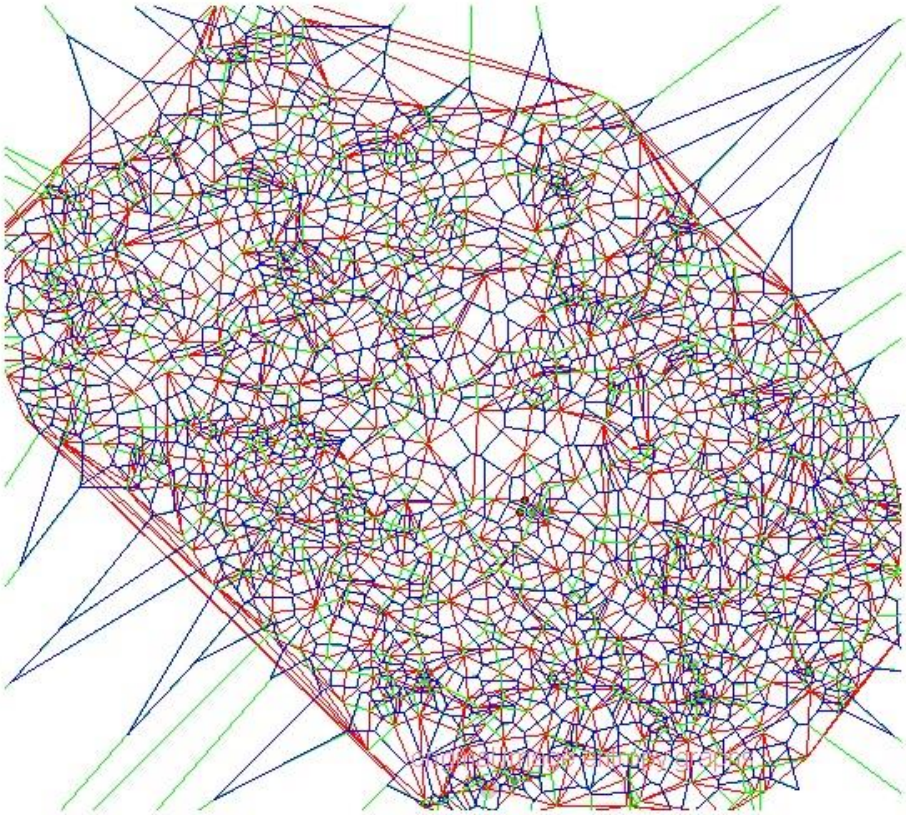

Figure 2:

Different orders of structure in a partly destroyed lung. The different segmentation gray value levels demonstrate the re-modelling of the lung parenchyma and the obtained emphysema and fibrous nodes

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Infection, repair and breakdown of involved orders of structure

The virus compartments are reduplicated by the infected cells which release numbers of complete viruses into their neighborhood. SARS-CoV-2 virus uses the angiotensin converting enzyme II (ACE-2) of bronchiolar and alveolar lining cells as the cellular entry receptor (40).

It creates intra-cellular isolated protein-covered substructures of the Golgi apparatus, alternates the mitochondrial network, recruits peroxisomes to viral replication organelles and forms by clusters of double-membrane vesicles (DMVs). These are tethered to the endoplasmic reticulum, released into the cytoplasm, induce cellular death and consecutive extra-cellular repair mechanisms which transport the virus to neighboring cells and via the blood stream into other compartments and organs of the whole body.

The infectious mechanism is repeated and the virus load extended. Involved feedback mechanism might activate cellular defense. i.e. 'train' immune competent cells such as T-cells and derived Killer cells which recognize and identify the Virus and determinate the action. The intracellular life reproduction period is estimated to 6 hours (41, 42).

The reduplication time of a normal epithelial human cell amounts to 24 – 48 hours. An infected cell probably will die within the same period having fulfilled the Virus job (43).

Infection usually starts in the cells of the upper respiratory system (nasal and bronchial surface cells which already present with a 'complete society, i.e. a constant and interactive mixture of different cell kinds (ciliated, goblet, basal, stem and Clara cells) which correspond to horizontal arranged orders of structure (44). They are surrounded by smooth muscle cells, connective tissue and nerve fibers. These are structures of a higher vertical arranged order of structure.

Light damages of the inner bronchial plane such as smoking does not seriously involve the next higher orders in most cases. However, it might result in deeper damages and chronic obstructive (deforming) bronchitis and obstructive bronchiolitis and finally will end in deformation of the distant lung areas with obstructive emphysema, diminished air exchange and respiratory distress (44).

Such chronic inflammatory damages can attack the different cell types with different intensity and induce severe changes of the cellular composition. Ciliated cells are most sensitive and might disappear completely, being replaced by goblet cells and squamous cells of different atypia (44). Thus, these changes induce completely new cellular societies with behave different and are usually prone to additional proliferation and finally in non-reversible and progressive cellular growth (cancer) (45-47). The changes might induce new vascular structures as exemplarily shown in

Figure 3

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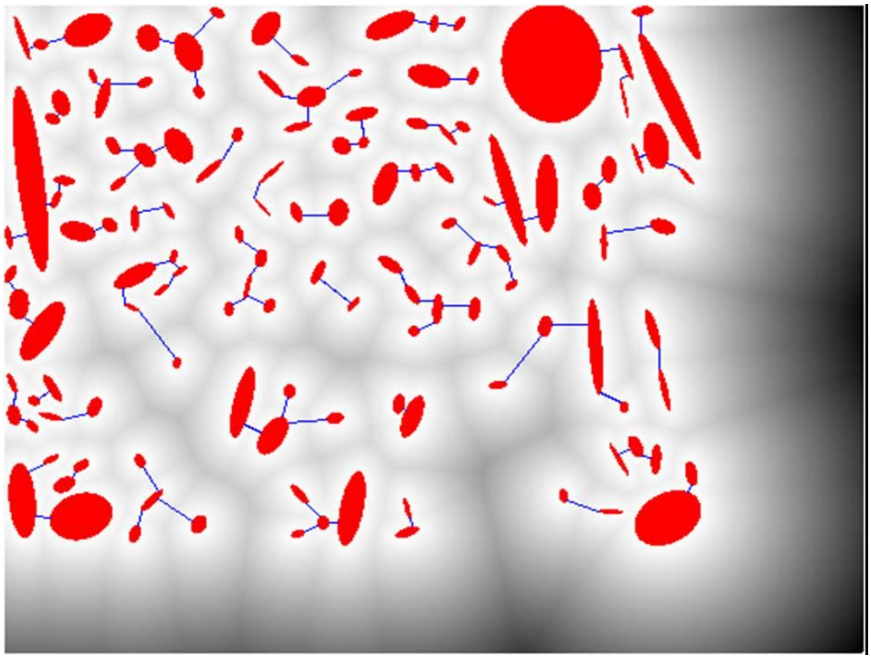

Figure 3:
Example of neovascularization in preneoplastic lung lesions (adenomatoid alveolar hyperplasia). The red marked vessels correspond to structurally abnormal created vessels in a precursor lung lesion.

A different cellular 'family member', namely inflammatory cells of different nature (B-cells, T-cells, macrophages, histiocytes, etc.) have to be mentioned too. Some of them enhance, others delay the proliferation of the original epithelial cells, others (namely B-cells) might create their own independent growth colonies (local lymphoma and pseudolymphoma) (48-50).

Clinical investigations to detect and potentially repair the structural instability of air conduction and exchange airways include bronchoscopy and biopsies. The <Figures 4-9>

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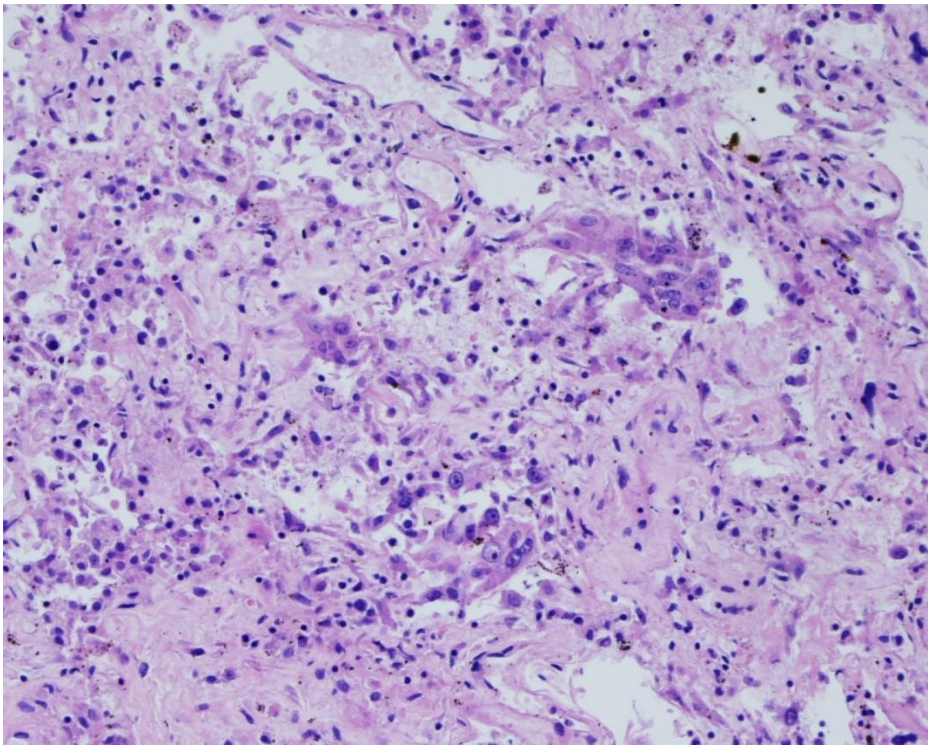

Figure 4:
Low magnification (x20), Usual Interstitial pneumonia with fibrinoid plugs, desquamative pneumocytes, foreign body giant cells, re-modelling of original lung parenchyma, completely destroyed air-blood barrier (HE, x 20). Consistent with active chronic virus pneumonia (SARS-2 Virus infection)

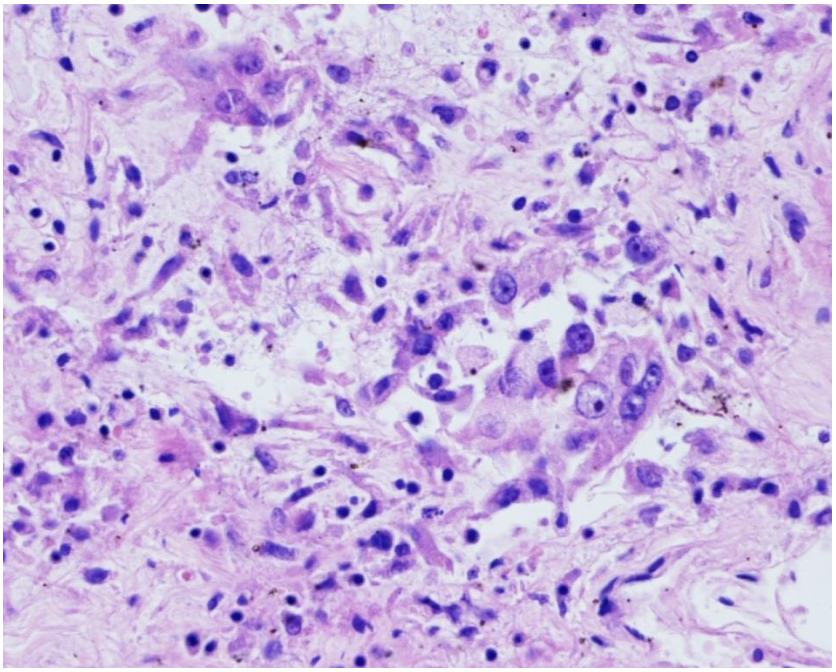

Figure 5:
Low magnification (x20), prominent nucleoli of pneumocytes indicate virus ingestion, intermingled inflammatory infiltrates, histiocytes and fibrin deposits remodel the lung architecture.

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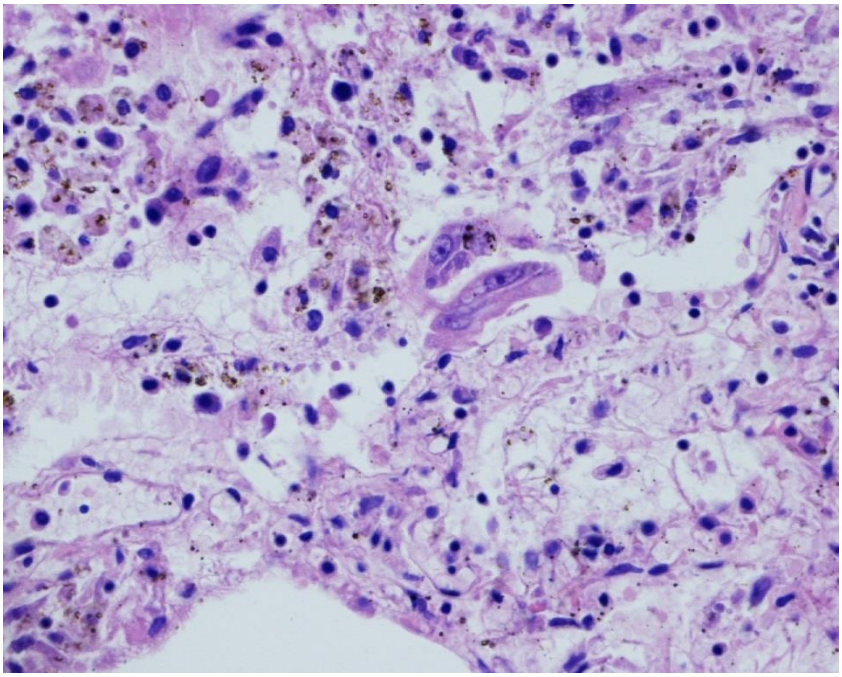

Figure 6:
Low magnification (x20), ectatic small vessels and bronchi, mixed inflammatory infiltrates, macrophages with ingested anthracosis pigment and hemosiderin.

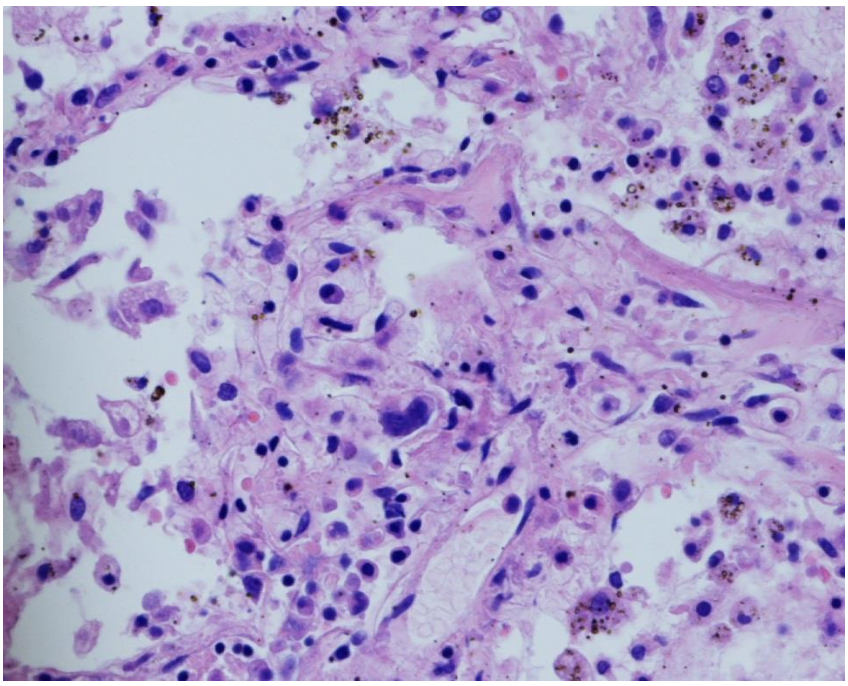

Figure 7:
High magnification (x40), ectatic vessels and bronchi, displaying with focal inflammatory destroyed walls, bleedings, and intraluminal and surrounding, partly organized blood agglutinations.

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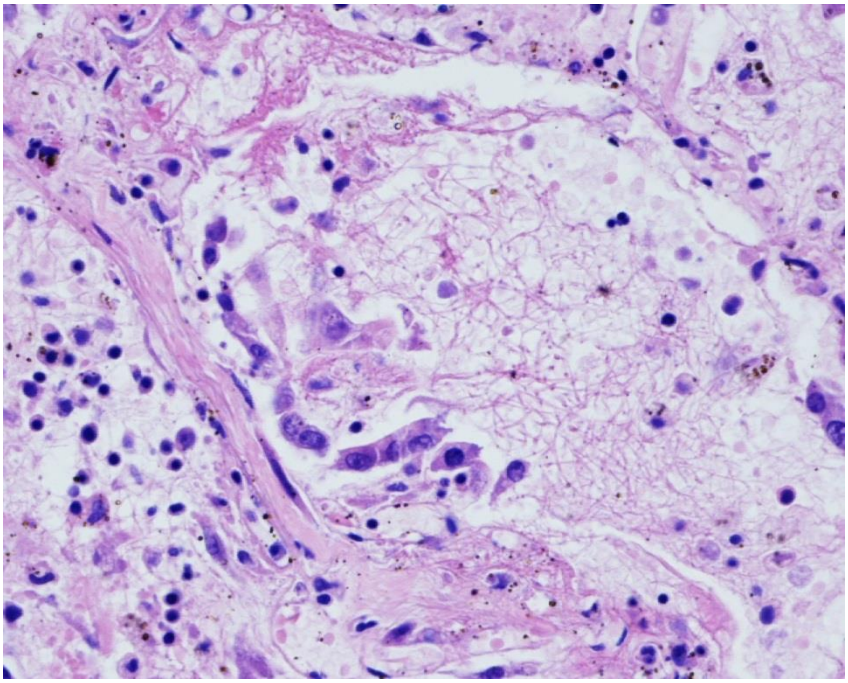

Figure 8:
High magnification (x40), ectatic small bronchi, filled with mucus and actinomyces, small vessels displaying erosion of endothelial cells and focal organizing thrombosis adhesions.

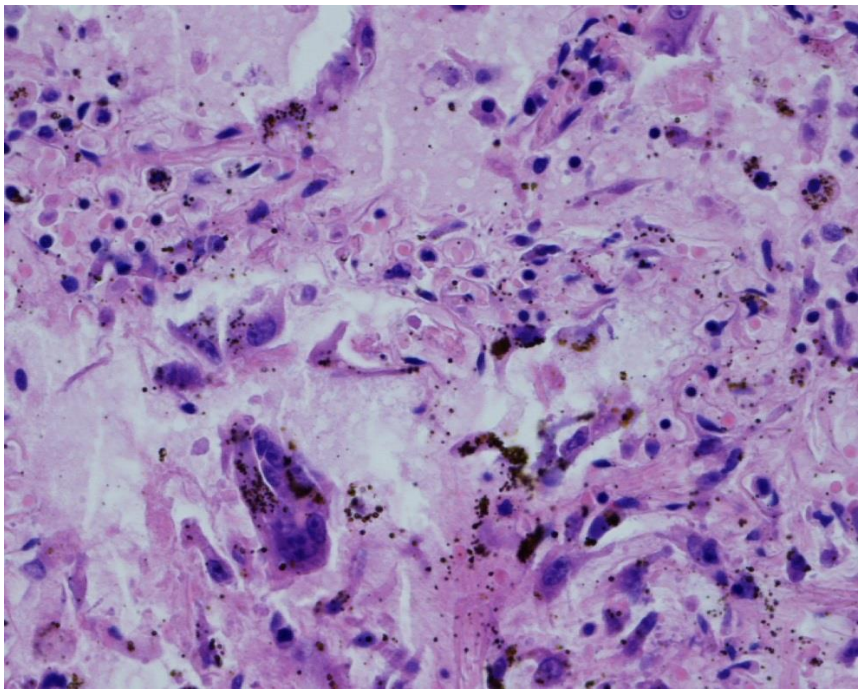

Figure 9:
High magnification (x40), completely destroyed lung, multiple pigment loaded macrophages, fibrin plugs and multinucleated foreign body giant cells.

illustrate characteristic findings. Thorough analysis of the images permits to reliably forecast the end stage of the observed alterations (32, 51-55).

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It should be noted that the analysis of 'micro-structures' and the society of involved cells (functional spatial units, cells and cellular compartments such as genes and macromolecules) can precisely predict associated changes of higher order structures such as cancer which present with alteration seen by in vivo examinations (computerized tomography, nuclear resonance images, etc.) (54, 56-58).

At present all clinical investigations target on structure alterations located at different levels inside the hierarchic order of body compartments and on potentially electro-magnetically detectable functions such as electrocardiogram, electroencephalography, etc. (19,59-62).

Characteristic Findings in an Autopsy of a COVID infected patient

Clinical data

The 75 years old male patient was initially admitted to the gastroenterological ward on May, 30, 2020 because of limited general condition, persistent diarrhea and vomiting. He was transferred to the COVID unit due to positive SARS-Cov-2 smears. He developed fever and respiratory problems. Increased oxygen demand and insufficient oxygen saturation demanded artificial aspiration in the COVID intensive care unit. There, increasing infection values were observed despite intensive antibiotic therapy, initiated with ampicillin/sulbactam, escalated to tazobac/ciprofloxazine, and supplemented by vancomycin and caspofungin. *Dermabacter hominis* and *Staphylococcus epidermidis* were detected in the hydrated blood cultures.
After initial spontaneous regression of haematuria, the patient developed diuresis reduction which made a citrate-CVVHDF necessary in addition to volume therapy and administration of *furosemide*. Elevated liver serum values and continued difficulty in breathing indicated a septic course with multi - organ failure. The patient was ready to be transferred to the ARDS (Acute Respiratory Distress Syndrome) Center of the Charité Hospital, but he died already at noon on June, 09,2020 in the intensive care unit.

Clinical Data and gross Findings

Known Health Status

Latent chronic tuberculosis.
Type II diabetes mellitus, insulin dependent.
Coronary heart disease with 5-fold stent implantation.
Chronic alcoholism.

Body Inspection and Internal Autopsy

Acute bronchopneumonia consistent with the clinical data of a Covid-19 infection:

Flaming mucous flushing of trachea and main bronchi. Scattered mucosal tracheal erosions. Massive, focal post-inflammatory pleural thickening of the right lung with a 65x35 mm in diameter, flat, plate-like calcification and a 20 mm large calcified fibrosis center between

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the pars diaphragmatica of the lower lobe and the right thorax wall. Focal, string-like pleural adhesions and fibrin deposits at the left lung, consistent with chronic active pleurisy. Almost continuously solidified parenchyma of both lungs, more prominent in the right lung, and consistent with histologically proven bilateral chronic active interstitial pneumonia. High grade general pulmonary edema (weight of the right lung: 890 g, of the left lung: 1050 g).

Chronic obstructive bronchopulmonary disease presenting chronic substantial emphysema, bronchiectasis, and anthracofibrosis (smoking lung) of both lungs. Anthracofibrosis of the peribronchial, tracheobifurcal and paratracheal lymph nodes. High grade pulmonary atherosclerosis.

Chronic cor pulmonale presenting with severe hypertrophy (wall thickness 7 mm), dilation of the right ventricle and right atrium. Relative tricuspid valve insufficiency (valve circumference 150 mm).

Chronic congestion of liver, spleen, kidneys, stomach and esophagus with venectasies and erosions in the stomach fundus. 200 ml ascites.

General atherosclerosis presenting with multiple high-grade plaques, ulcerative, thrombotic and calcifying aortic and thoracic aortic arteriosclerosis. Minor non-stenosis atherosclerosis of the right and left A. carotis communis. Moderate stenosis, scattered plaques, ulcerating and calcifying atherosclerosis of the carotid bifurcation. Multiple plaques, high-grade plaque-forming, ulcerative, thrombotic and calcifying atherosclerosis of the abdominal aorta with preference for the infra-renal sections. Moderate plaque-forming calcifying atherosclerosis of the right and left iliac arteries.

Coronary heart disease presenting with high grade atherosclerosis and stenosis of the left coronary artery. Residuals of implantation of a 20 mm long stent in the Ramus interventricularis anterior, approximately 25 mm after leaving the main stem of the left coronary artery. Long-stretched severe stenosis (>75%) in the proximal section of the Ramus circumflexus artery, approximately 10 mm after leaving the main stem of the left coronary artery. Low-grade stenosis and atherosclerosis of the right coronary artery (RCA). Histologically small disseminated myocardial scars ventrally and distally in the left ventricle and ventricle septum. Perivascular fibrosis and lipomatosis.

Findings of hypertensive heart disease (no clinical history) indicated by strong muscular wall hypertrophy of the left ventricle (wall thickness 18 mm, heart weight 470 g, body weight 96 kg, relative heart weight 0.49%, normal values 0.4% to 0.45%). Dilation of the left ventricle and atrium. Chronic congestion of the lungs.

Cerebral vascular status presenting with low stenosis atherosclerosis of the A. basilaris, A. cerebri posterior and the A. cerebri media in both sides of the arteries.

Renal vascular status presenting with minor cutoff stenosis of both renal arteries. Several grained indentations in the kidney cortex on both sides up to 12 mm diameter.

Chronic alcohol consumption (according to clinical data) indicated by diffuse hepatomegaly (liver weight 2360 g) and chronic sclerosing pancreatitis.

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Microscopic and gross images of COVID virus infected lungs

At autopsy, the infected lungs present with a mixture of the virus induced damage of blood – air boundary, consecutive lung edema and 'healing' areas of consolidation and partly reversible fibrous re-modelling. Artificial inspiration and locally different virus load as well as cellular defense actions induce hazardous forces which enhance local emphysema, ventilation and vascularization areas as well as oxygen damage of bronchiolar and alveolar lining cells (especially type I pneumocytes) (44) . All these factors intermingle and present with images as shown in <Figures 4-9> which have been taken from the presented autopsy case.

In addition, virtual slides are included <VS 1 – VS5> which give an impression about the extent and intensity of the alteration of lung parenchyma after COVID-19 infection of non-immunized persons. **Click** on the **Thumbnails** for viewing the **virtual slides**.

The lungs are congested by extensive acute and older hemorrhage, disturbed and extremely dilated bronchi (artificial respiration) and vessels. These pulmonary damages block the oxygen passing the artificially ventilated lung areas, and any sufficient supply of the patient's organs.

Infection rate, incidence and mortality

Correct calculations of infection rate, incidence, death rate and mortality requires to accurately proof the infection (virus, virus compartments) inside or attached to the original body tissue (63-69). Obviously precise sampling and preservation of test material is mandatory to obtain reliable results despite all laboratory quality tests (70, 71). Clinical, 'street' or self-test conditions vary to a great amount and should not been taken equal.

In addition, the goal of any individual test plays a role too: the test is commonly less precisely performed (and potentially more likely of a negative result) if the tested person wants to obtain a negative result (35).

The introduction of restrictive private data protection and performance in medical data has induced the shutdown of former surgical pathology cancer registries in Germany such as the Cancer Registry North Baden (72, 73). It was a world-wide recognized population and tissue-based cancer registry of gastro-intestinal cancer in the region North Baden, and included a systemic registration of cytology, biopsy, and surgical specimens data of all pathology institutes of that region (72, 73).

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The strict data protection law induced a nearly complete loose of experience, education and training of epidemiology in Germany. As a result, any superficial clinical data collection and registration is considered 'epidemiological', and the involved experts (virologist, clinical pathologist, etc.) are considered for 'epidemiologists' contemporarily (74-77).

The German data protection law prohibits digitalization of any personal data without private permission. To obtain private permission is nearly impossible for any 'secondarily involved institution'. Therefore, most public health centers have to work with 'hand-written' paper documents. Thus, the officially reported case number falls significantly on Mondays and Tuesdays or after every weekend, and nobody can assure that no cases are lost during the weekend period.

The derived incidence and mortality of COVID19 cases in Germany during the period 2020 - 2021 have already been published (76, 78).

The figures indicate a delay of 10 days between case detection and associated mortality. Computation of sex relation and age of the victims does not result in specific significant differences with the exception of absolute numbers.

Notable increase of incidence and its dynamics can be derived from data which have been collected in public health centers located at the Southern and Eastern border of Germany

Figure 10

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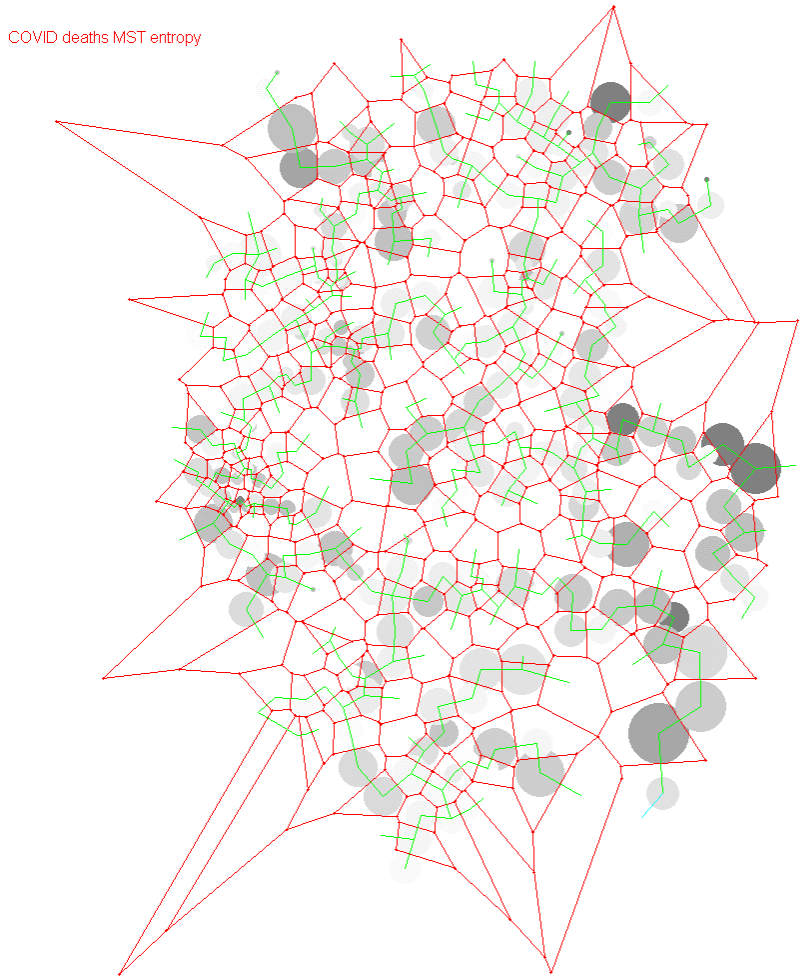

Figure 10:

Entropy levels computed on the basis of reported COVID-19 victims in all Community Health Centers of Germany during the period (2020 – 2021). Note the boundary location of centers displaying with high entropy levels. These Centers display with broader variations of submitted COVID-19 cases when compared to those living inside the country.

The incidence data of the neighboring countries (Czech Republic, Poland, Austria) have been reported high in relation to the German data during the period of COVOD data collection, and the increased incidence might be associated with the high number of workers who regularly pass the borders (78). A different explanation might be that living systems expose alterations more remarkably at boundaries in comparison to central districts (78).

Protection and curative data

During the pandemics five different active dominant variants of SARS-CoV-2 have been identified (Alpha, Beta, Gamma, Delta and Omicron) (79, 80). Understanding the potential for SARS-CoV-2 variants to differ in transmission in clinical severity or in susceptibility to vaccine-derived immunity is crucial to inform public health responses.

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The latest variant, Omicron, has higher infections rates, but a clearly lower risk for severity of diseases, intensive care unit (ICU) admissions or fatality compared to the previous variants (81-84).

Lewnard et al. report about 90,000 cases of PCR-confirmed cases with mixed Delta and Omicron variants a period of 2 months (2021, November and December). The Omicron variant infected about 70,000 individuals, and the Delta variant about 20,000 cases. The ICU admission rate (n of 1,000 cases) was calculated to 1.4 for Delta and to 0.1 for Omicron.

The fatality rate (n of 1,000 cases) was calculated 0.8 for delta and 0.014 for Omicron (1 fatal case was observed within 70,000 Omicron infected individuals 0.01) (81-84). A study in the United Kingdom published in Health reports confirmed Lewnard's results [https://www.gov.uk/coronavirus]. A total of 57 fatal cases are reported among about 650,000 validated Omicron cases (0.08 death for 1,000 positive PCR tests).

Injection of either mRNA or antibody-based substances provides an effective protection with only minor or non-detectable side effects (85-89).

The percentage of immunized persons amounts to approximately 70% in Germany after two years of available antibodies.

Protective injection can limit the virus spread to the upper airways and induce a response of effective macromolecules in a three – tenfold amount (90-95). Two-fold immunization with mRNA molecules induces an effective prevention of severe or fatal course of disease in 90% - 95% (96-98). Most cases, who underwent artificial ventilation, did reject immunization due to personal reasons (90-95).

Orders to maintain a minimum spatial distance (1,5 m) between citizens in closed rooms or public spaces were usually disobeyed by heavy demonstrations, and a steep COVID-19 incidence increases seven – ten days after such demonstrations (99-101). Although numerous open air and in-room experiments clearly demonstrated that physical distance between Virus carriers and non-infected persons plays a significant role to limit the virus spread, the involved societies could not be forced to effectively follow the prescriptions (99-103). This observation holds true for governments of quite different types of organization, such as democratic Western States or centrally ruled States (Republic of China, Russia, African States) (102, 104).

Only heavy and strict police actions could 'fight down' public protests against 'distance' and 'communication / transportation / mobilization' orders of the corresponding state administrations (105, 106).

Therefore, resistance seems not to be associated with the individual structure of the involved state. It is probably an inborn feature of any human society, and might be called a 'mandatory society structure'. In fact, communication, distance-related 'examination' of neighborhood, and adequate reaction are already present at lower order of living structures (cellular level and above) (107, 108).

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Reaction of the German Society and Government

Germany is 'democratically' ruled by a central parliament and, in addition, by a set of quite 'independently' acting states: (https://www.gesetze-im-internet.de/gg/BJNR000010949.html.

The individual state parliaments are responsible for intern organization issues such as police, health care, education, traffic and others (https://www.gesetze-im-internet.de/gg/BJNR000010949.html).

Two independent public health oriented institutions (Paul Ehrlich Institute, Langen, and Robert Koch Institute, Berlin) control public health situation and security data in Germany, and investigate in quite different issues such as side effects of pharmaceutic agents, infectious material, nutrition, or situation induced by catastrophes and reports to the Federal Ministry of Health (https://www.pei.de/DE/home/home-node.html). Herein, The Paul-Ehrlich-Institute (PEI) is the Federal Institute for Vaccines and Biomedicines, and the German federal regulatory authority active in the field of pharmaceuticals. It employs around 900 people at its location in Langen (https://www.pei.de/DE/home/home-node.html).

The Robert Koch Institute (RKI), Berlin is Germany's public health institute. Its mission is to protect and improve the health of the population. It investigates in a broad range of communicable and non-communicable diseases (diabetes, cancer, endemics), develops policy recommendations and preventive strategies, and employs 1,100 individuals from 90 different occupational fields (https://www.rki.de/DE/Home/homepage_node.html).

Both institutions recognized the arising Corona pandemics soon after its detection in Wuhan, China and informed the Federal Ministry of Health. The first reactions of the central government included public prescriptions (distance between persons in closed rooms, surgical masks, hand washing, and other hygiene actions). Effective proven injections based upon a new mRNA technique were distributed in the population already after six months after outbreak of the pandemics (109-111).

The 'general opinion' of the German society is influenced by the tools of four dominating factors, namely a) official information of the Central Government and opposition, b) private press (journalism), c) industry, capital and trade unions, and d) justice and executive of laws (112).

All known democratic systems depend on material prosperity because it founds the ability to take use of or imagine to liberating life time from necessity of survive and to experience freedom. Obviously, individual freedom in a prosperous democracy differs to a great amount from that of a political prisoner in a dictatorship.

The German Government as well as its scientific advisers did (or could not) distinguish between different opinions and action of freedom. A limited, however noisy street demonstrating part of the German population considers the pandemic induced mandatory 'restriction' of 'public communication and mobility' and of individual 'health responsibility (injection compulsion)' a 'prisoner's liberty. These 'liberty fighters' are convinced that

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prohibition of Majorca holyday travels is an arbitrarily illegal Governmental and not a pandemic induced action.

Such a 'stupid' public reaction should not be condemned. It is a symptom of welfare and, in addition, of stir laws ruled by judges who are not trained and do not understand basic natural laws. It can be considered an unavoidable nature's answer to overwhelming public welfare and individual liberty (113).

Consecutives

Corona pandemics in Germany will probably result in long term destruction of actual democratic rules and existing ideas of liberty, education of pupils and organization of human life (31). It primarily involves the lowest levels of human living structures (cellular compartments and cells) and forces highest human organizations (states, government) to modify and limit functions of structures at this level in man, i.e. communication, mobilization, education, and transportation (19, 35, 62).

The actual Corona prescriptions and restrictive rules damage poor and wealthy societies. They have to be replaced by more flexible administrative regulations, research, explanation, and goals to direct public behavior (112).

Ethic goals should address mandatory conditions of life, cost to benefit relation of actions, and take into account existing resources, period of access and replacement options. Only such active and innovative changes in Democracy and State Organizations might prevent a fatal Federal breakdown of established health and logistic structures.

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DOI: http://dx.doi.org/10.17629/www.medical-journal-of-virtual-science.de-2022-2:1

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