

Sterile filters to use as an endpoint filtration for drinking water

Useable for showers and sanitary fittings as an inline filtration

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Hygiene assessment of use in hospitals, practices and residential homes for the elderly in the view of actual pandemic development

In view of the actual virus pandemic since March 2020 we see persons with chronic and severe diseases as a special group which shows high susceptibility in infections. Especially patients with diseases of heart and circulation or with lung diseases or neoplastic diseases or with immune suppressive therapy are a special group which needs to protect urgent.

These diseases stress the normal immune function so that causes a higher likelihood in infections. Such infections can cause by a lot of varieties of microorganisms (viruses, bacteria, fungi and parasites).

It is clear that for these persons needs to apply special rules and regimes to prevent infections.

The following aspect is important for interaction of microorganisms in case of a first infection is present: If there are viral respiratory diseases present, often a bacterial super-infection will follow.

Also the new virus which causes the actual pandemic, SARS-CoV-2, is a typical viral microorganism which causes bacterial super-infections after primary virus infection.

This phenomenon is caused because viruses are forced by lymphocytes primary and bacteria are forced by granulocytes. Different classes of microorganisms are forced by different functions of the immune system.

In case of virus infection, immune system produces more lymphocytes and less granulocytes. This is normal, because *lymphocytes* are needed to force against the *viruses* as described before. But in this state granulocytes are missing. And *granulocytes* are needed for *bacterial* force of immune system.

So a higher likelihood (susceptibility) for bacterial infections is found after a stronger virus disease.

This is found with the measles and also with respiratory infectious viruses, like the actual virus SARS-CoV-2.

A patient is strongly struggled by a SARS-CoV-2 infection and is already alive, thanks God! But than after going through the virus infection, a high risk for bacterial infections is found which are also transmitted by aerosols.

Than such a patient can die in an infection by Pseudomonas spp. or Legionella spp. or Burkholderia spp. and other environmental bacteria which can causes human diseases, especially lung diseases.

This immunological phenomenon needs to know when caring patients in the hospitals, residential homes for the elderly or practices.

The focus is on the SARS-CoV-2-virus, of course. But we never shall forget the side effects of infection which bacteria after severe virus diseases. So we have a high number of post virus infection lethality which is caused by these side effects.

The correct number of this phenomenon with SARS-CoV-2-virus is not really known in this time, because experience with this virus is small already. But when it is compared with the measles or mumps or rubella, we need to think about a high number of post virus infection side effects in bacterial infections.

So it is needed to see a high amount of post virus side effects by bacterial infections. To whom patients urgent need to protect also.

When we conclude the whole aspects we see what is needed:

- Breaking of infection chains (distance, masks, disinfection)
- Isolation of patients with present virus infections
- Control the contacts of present infected patients
- **Control the environment to prevent side effects of bacterial infections**

All four aspects of this construct are relevant in the same manner like the four columns on which the building of prevention stands. If one of these aspects is missing, protection and safety will be in danger.

The use of endpoint sterile filtration of drinking water is urgent needed especially in hospitals, resident homes for the elderly and practices because a lot of patients which virus infections are in danger about bacterial super-infections as side effects of primary virus infection.

Hollow capillary filters which are described previous are a very strong and helpful tool to reduce bacterial count in water for drinking or caring the body with hand showers and armatures and to reduce the risk of bacterial super-infections.

We urgent recommend the use of these endpoint hollow capillary filters especially in time of worldwide SARS-CoV-2-virus pandemic to prevent infectiological side effects. In this way the maximal performance of safety is realised for the patients.

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