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Does cleaning hands with ash stop or reduce the spread of viral and bacterial infections compared with soap or other materials?

Plasma from people who have recovered from COVID-19 to treat individuals with COVID-19

Does cleaning hands with ash stop or reduce the spread of viral and bacterial infections compared with soap or other materials?

Authors: Paludan-Müller AS, Boesen K, Klerings I, Jørgensen KJ, Munkholm K

Background

Some infectious diseases are spread by airborne droplets from coughs and sneezes, which can infect people who touch contaminated skin or surfaces. Washing hands with soap and water may prevent these diseases from spreading. People with no soap may use other materials like ash, mud, soil with or without water, or water alone, to clean their hands. Hand cleaning with ash (the solid remains from cooking stoves and fires) might work by rubbing away or inactivating the virus or bacteria. However, chemicals in the ash could also damage the skin.

If ash is an effective hand cleanser, it could reduce the spread of coronavirus (COVID-19) and other infectious diseases in low-income areas where soap is not widely available.

What did we want to find out?

We wanted to know whether people who use ash for hand cleaning are more or less likely to catch infectious diseases than people who use soap, water, mud or soil, or who do not clean their hands. We also wanted to know whether using ash causes unwanted effects, like sore hands or a rash.

Our methods

We looked for studies that examined hand cleaning with ash compared with soap, mud, soil, water only or no hand cleaning. To answer our questions, the studies could include adults and children and take place anywhere.

COVID-19 is spreading rapidly, so we needed to answer this question quickly. This meant we shortened some steps of the normal Cochrane Review process. We could not find the full texts of five potentially relevant

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studies, or contact study authors for additional data. Although we searched several databases we may have missed some studies. We plan to include all relevant information in a future version of the review.

Results

We identified 14 studies that assessed ash for hand cleaning. Only one small study directly compared people chosen at random to use ash or soap or other materials (randomised studies produce the best evidence). The studies included people of all ages and mainly took place in low-income, rural communities. Six studies provided information to help answer our question.

One study investigated children who had been to hospital with diarrhoea compared with children who had not. Study authors looked at the hand washing area in the children's houses to see how they cleaned their hands. They found that families that used ash for hand cleaning made a similar number of hospital visits for children with diarrhoea as those families that used soap.

Another study investigated whether women with unusual vaginal itching or discharge were more likely to clean their hands with ash than women who had not experienced such symptoms. They found that women who used ash and water for hand cleaning were as likely to experience vaginal itching or discharge as those women who used soap.

Four studies measured bacteria on hands after using ash, soap, water, mud or no hand cleaning. We are uncertain about the effect of ash compared with other materials for hand cleaning on bacteria on people's hands because the studies used unreliable methods and their results were unclear.

None of the studies provided information about the severity of infectious diseases, whether people used ash or another material consistently, the number of deaths, or unwanted effects due to hand cleaning with ash.

Certainty of the evidence

Our certainty (confidence) in the evidence was limited because we found few studies; those we did find had unreliable methods and different kinds of participants, and none of the studies we found reliably examined whether participants got infections.

Conclusion

We are uncertain whether hand cleaning with ash compared with hand cleaning with soap, water, mud, soil or no hand cleaning stops or reduces the spread of viral or bacterial infections. We do not know if hand cleaning with ash causes unwanted effects.

Search date

This review includes evidence published up to 26 March 2020.

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Plasma from people who have recovered from COVID-19 to treat individuals with COVID-19

Authors: Valk SJ, Piechotta V, Chai KL, Doree C, Monsef I, Wood EM, Lamikanra A, Kimber C, McQuilten Z, So-Osman C, Estcourt LJ, Skoetz N

Background

Coronavirus (COVID-19) is a highly infectious respiratory illness caused by a new strain of virus. The outbreak has spread rapidly on a global scale. People infected with this virus may not show signs of the disease, others may develop symptoms, including fever, cough, shortness of breath and sore throat. In some people the infection is more severe and can cause severe breathing difficulties, leading to hospitalisation, admission to intensive care or death. Currently, no vaccine or specific treatment is available.

People who have recovered from COVID-19 develop natural defences to the disease in their blood (antibodies). Antibodies are found in part of the blood called plasma. Plasma from blood donated from recovered patients, which contains COVID-19 antibodies, can be used to make two preparations. Firstly, convalescent plasma, which is plasma that contains these antibodies. Secondly, hyperimmune immunoglobulin, which is more concentrated, and therefore contains more antibodies.

Convalescent plasma and hyperimmune immunoglobulin have been used successfully to treat other respiratory viruses. These treatments (given by a drip or injection) are generally well-tolerated, but unwanted effects can occur.

What did we want to find?

We wanted to know whether plasma from people who have recovered from COVID-19 is an effective treatment for people with COVID-19, and whether this treatment causes any unwanted effects.

Our methods

We searched major medical databases for clinical studies on treatment with convalescent plasma or hyperimmune immunoglobulin for people with COVID-19. Studies could be conducted anywhere in the world and include participants of any age, gender or ethnicity, with mild, moderate or severe COVID-19.

COVID-19 is spreading rapidly, so we needed to answer this question quickly. This meant that we shortened some steps of the normal Cochrane Review process - only one review author extracted data from studies and assessed study quality; normally two review authors would do this.

Key results

We included eight completed studies, with 32 participants who received convalescent plasma. None of the studies randomly allocated participants to different treatments (randomised trials produce the best evidence). None of the studies included a group of people who did not receive convalescent plasma, as a comparison group.

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All participants in the studies were alive at the end of follow-up, but not all had been discharged from hospital. Follow-up varied from 3 to 37 days after treatment with convalescent plasma.

Six studies used the level of breathing support that participants required as a measure of recovery. Breathing support included oxygen therapy, mechanical ventilation and the need for a special machine that oxygenates the blood. All six studies reported clinical improvement in at least some of their participants, but it remains uncertain whether this improvement was related to convalescent plasma, another treatment, or the natural progression of the disease.

Six studies reported time to discharge from hospital for some of their participants, all of whom received convalescent plasma. The time to discharge ranged from 4 to 35 days after convalescent plasma treatment.

Six studies included participants with severe COVID-19. Most had improved at final follow-up, but this improvement may have been due to another treatment, the natural progression of the disease or convalescent plasma treatment.

Two participants reported unwanted effects related to convalescent plasma. One participant developed a fever, and a second participant experienced anaphylactic shock (severe allergic reaction) early on in the transfusion.

Certainty of the evidence

Our certainty (confidence) in the evidence was very limited because the studies were not randomised and did not use reliable methods to measure their results. Furthermore, they had only a small number of participants, who received various treatments alongside convalescent plasma, and some had underlying health problems.

Conclusion

We are very uncertain whether plasma from people who have recovered from COVID-19 is an effective treatment for people with COVID-19. The completed studies we found were poor quality and their results could be related to the natural progression of the disease, other treatments that the participants received, or to convalescent plasma. However, our searches found 48 ongoing studies: 47 evaluating convalescent plasma and 1 evaluating hyperimmune immunoglobulin, of which 22 are randomised. We will update this review with their results when these studies are completed.

If you have any questions or comments with regard to the above document please feel free to contact me.

Kind regards

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