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Apple cider vinegar can help clear bacteria and yeast infections; a natural cure

Antibiotic resistance poses a major health issue worldwide. There has never been a greater need for new anti-microbials which are natural, active on multiple organisms and ideally beneficial to the patient.

Bacteria such as E-Coli, Staphylococcus aureus and yeasts such as Candida albicans can easily become pathogenic especially when an individual is immune deficient, has cancer, other infections or is nutritionally compromised. Pathogenic E-coli are the leading cause of urinary tract infections, diarrhoea, respiratory illnesses and pneumonia. Whereas Staphylococcus aureus has been linked with boils, carbuncles, cellulitis, sepsis and toxic shock syndrome. Candida albicans can cause yeast infections in the blood stream, mouth and genitals. Apple cider vinegar (ACV) has been used for years as a traditional folk remedy to treat conditions such as indigestion, high blood cholesterol and maintain general health. Today it forms a major ingredient in many natural food drinks combined with honey, other fruits or herbs. This is no surprise as it can also relieve acid reflux, control blood glucose levels and relieve infections. ACV is produced from cider that has undergone acetous bioconversion and has relatively low acidity (5% acetic acid). It also contains organic acids, flavonoids, polyphenols, vitamins and minerals.

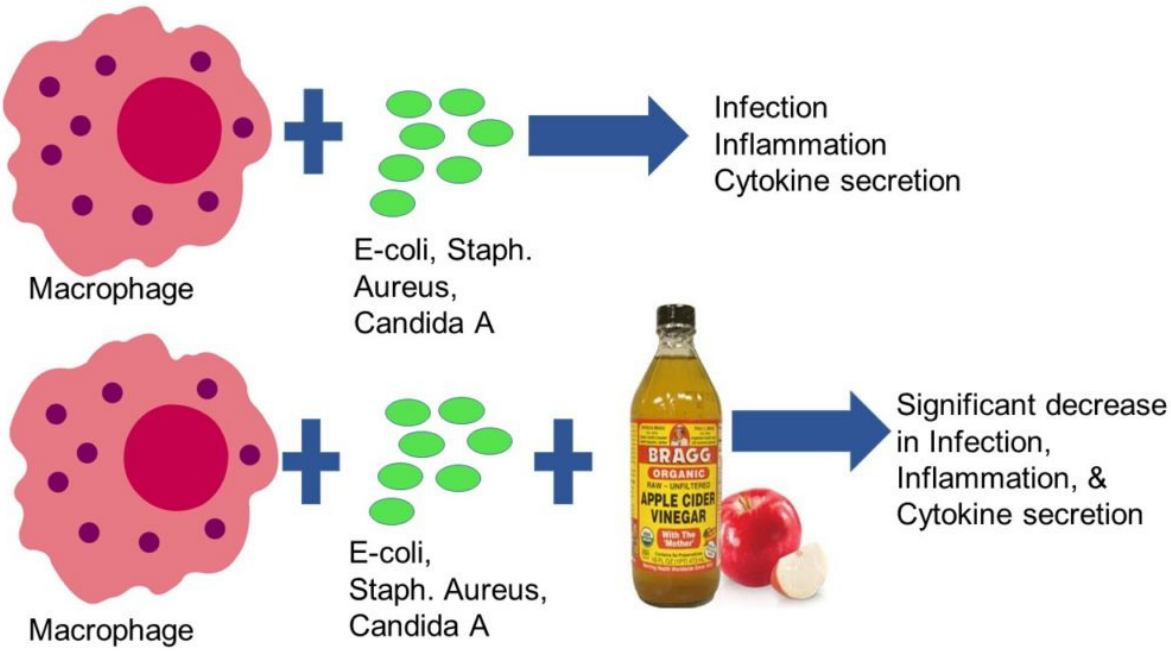

Fig. 1. The effect of apple cider vinegar on white blood cell clearance of microbes. Apple cider vinegar reduces the efficacy of bacteria and yeast to grow. this helps white blood cells such as macrophages to clear and engulf these microbes which will in turn reduce inflammation and harmful cytokine secretion.

We tested the effect of commercial ACV directly on microbial cultures over a 24 hour period, measuring inhibition zones. We also looked at whether ACV could have an anti-inflammatory effect in vitro. This was tested using human blood derived monocytes which were incubated with microbes and AVC. Collected supernatants were analysed for inflammation markers and antibiotic activity. We also looked at white blood cell activity and uptake of bacteria and yeast after addition of ACV to infected white blood cells.

We proved that ACV could potentially protect the body from harmful bacteria by stopping the growth of bad bacteria and fungus in its tracks, stopping the spread of these infections. The mechanisms involved by which ACV works is that it kills the pathogenic organisms by destroying their cell walls, protein structure, nuclear proteins, metabolic enzymes altering their structure. This in turn prevents these organisms from replicating and stops their ability to respire and undergo metabolism. This results in their death and increased uptake by white blood cells such as monocyte and macrophages whose job is to clear infections by a process of phagocytosis. Adding ACV to infected white blood cells lead to an increase in clearance of these harmful microbes by the cells, a decrease in release of chemicals associated with inflammatory processes such as pro-inflammatory cytokines. Therefore we showed that ACV can reduce bacteria burden and help clear infections from certain bacteria and yeast. This implicates that ACV could be used to treat clinical infections without the harmful side effects hence could be a natural alternative therapeutic.

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