The increased reliance on antibiotics over the past decades has left us vulnerable for its shortcomings. Not only is the use of antibiotics associated with considerable side effects, such as antibiotic associated infections, but due to the versatile and adaptable nature of microbes, antibiotic resistance is increasing rapidly. With the rate of new antibiotics being discovered decreasing, this leaves us in need of alternative treatments. Although vaccines are available for more and more highly contagious diseases, it is unlikely that they will be available for all infectious diseases currently treated with antibiotics. Although thirty years ago research into probiotics was unpopular, many researchers now argue in favour of the use of probiotics to prevent or cure infectious diseases.

Changing the standard

Reid argues in his expert review article, a change in the entire approach to control infectious diseases. Rather then the current hospital environment, in which ideally all microbes are eliminated, he proposes an environment in which we stimulate beneficial microbes and provide probiotics as a way to prevent and cure infectious diseases. This would not only reduce the need for antibiotics, but also limit the side effects experienced upon their use. Several studies have been conducted in clinical settings that support this view. For instance, it was shown that in surgical procedures, treatment with probiotics resulted in a reduction of infection rate, less use of antibiotics, and a shortened hospital stay. Furthermore, usage of probiotics resulted in a reduction in severity and duration of respiratory infections, prevention and reduction of antibiotic-associated diarrhoea and infection, and reduction of urinary and vaginal infections incidence and recurrence. One of the most striking results however, might be that the incidence of necrotizing enterocolitis (NEC) in premature, low-birth-weight babies was reduced, thus reducing both mortality and antibiotic use. This shows that even under the most susceptible conditions to infection and death, probiotics positively influence the outcome.

Probiotics in clinical practice

So why is it, with such overwhelming evidence, that probiotics are not yet widely used in hospitals? It seems that the foremost reason is a fear of bacteria. A higher level of fear is experienced for negative effects that could result from probiotics, then for the consequences of not using probiotics. Although the European Food Safety Authority considers all common species of probiotics as safe, probiotics do
contain live microbes and it is therefore only natural that care must be taken. This however, is no different from the care that must be taken with currently widely used medications. Even more so, it is important to have clinical guidelines ensuring quality and effectiveness, same as there are guidelines for chemical drug use. Many products currently use the term probiotic without assessment of their effectiveness, therefore clinical guidelines are being developed, or in some countries already have been developed that list the probiotic products tested on humans and show the evidence for their effectiveness. Quality control is of course essential, as is continued research. But with strong evidence pointing towards the benefits of probiotics in infectious disease control, they should be welcomed with open arms and minds to fully take advantage of their potential.

**References**


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