Biofilms: hard to detect, easy to underestimate, but most definitely here to stay

Rose Cooper

Biofilms are found in most natural environments and are probably the most common form of microbial existence (Costerton et al., 1995). They are relatively stable, three-dimensional communities of microbial cells encased in a complex mixture of extracellular polymers. Biofilms normally form at interfaces after adherence of free-living (planktonic) cells, which grow and divide to form clusters. The cells generate chemical signals that aid communication between members of the same species. As the numbers of cells and signals within clusters increase and a critical level (or quorum) is exceeded, gene expression within the cells changes and a definitive study may have to be devised, optimised, validated, implemented and evaluated. This will allow the prevalence of biofilms in wounds to be established, and their role in pathogenesis to be fully explored. New ways of controlling biofilms may have to be developed and clinically evaluated. In turn, new management algorithms may have to be devised. Our belief in evidence-based medicine to inform clinical practice means that it is going to be years before we can confidently diagnose and effectively treat wound biofilms routinely so it appears that they will be providing a challenge to wound care specialists for a long while to come.

References