EVALUATING ANTIBIOFILM STRATEGIES

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A lot of research has been invested in finding non-invasive applications to fight the inert tolerance of the biofilm towards antibiotics and the immune system. The nature of biofilms makes them very hard to diagnose and hence false negatives often obstruct evaluation of treatment strategies. Furthermore, the study of healing wounds is complicated by the challenge and longevity of non-healing wounds. Therefore, in vitro biofilm studies have widely been applied to study anti-biofilm treatment strategies as an obvious alternative to clinical trials. Such studies are highly needed and yield a lot of important information if used with care. Until recently such treatment strategies have been tested on fast growing bacteria in shaking cultures and thus not involving biofilm-growing bacteria. Now the use of biofilm models is becoming more common. The downside of the in vitro models is that it is impossible to mimic a clinical biofilm; nevertheless the lack or addition of host components such as proteins and immune cells should always be considered. Another challenge researchers should be aware of is the false dogma stating that surface attachment per se makes the biofilm tolerant. This might not be true, since young surface-attached biofilms still have high growth rates and only a limited matrix shield and therefore is highly susceptible to most antimicrobials.

In this talk invites for a discussion of how to align in vivo and in vitro models to simulate the wound in the best possible way.