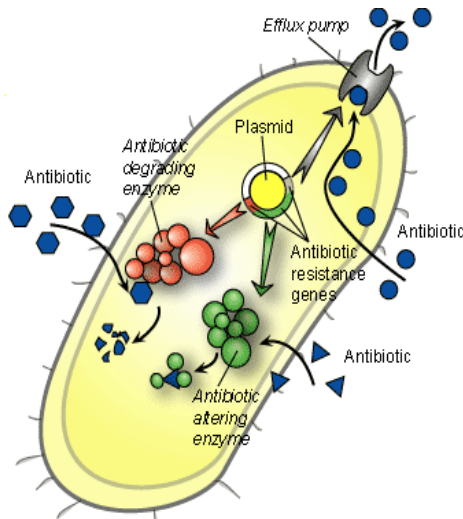


How MRSA developed various methods to combat antibiotics

U.S. and German researchers, have found that MRSA secretes a peptide formed by amino acids - which causes immune cells, or neutrophils, to burst, eliminating your body's main defence against infection. The MRSA peptide compounds cause inflammation, drawing the immune cells to the infection site, at which time they destroy the immune cells.

It takes only five minutes of exposure for the immune cells to be damaged and about an hour for their destruction. These findings appeared in the online edition of the journal Nature.



MRSA are organisms whose very DNA is designed for survival. They can mutate and adapt to virtually any pressure that we expose them to and the most important one now is antibiotics. From the bacteria point of view, antibiotics are the biggest problem they've had to face in their evolution and they're doing a good job of adapting."

Staphylococcus aureus: There are 11 lethal strains of MRSA armed with eight enzymes and six toxins and a very complex cell wall. CA-MRSA can kill healthy person within 12-24 hours. This bacteria is 8-10 times more powerful than any bacteria causing Meningitis (Streptococcus meningitide, H Influenza). Staphylococcus aureus is reported to pass on the

technical know how of antibiotic resistance to Streptococcus.

There are antibiotics in the pipeline for some infections, including MRSA, but they are slow to arrive on the market and few are in a convenient pill form. That presents patients with a difficult and costly outlook for hospital treatment because the antibiotics are given intravenously. The antibiotics that are used now are daptomycin and cephazolin. Soon the MRSA will become resistant to the daptomycin, the we don't know what we're going to do.

Pharmaceutical companies, frankly, there is not as great a fiscal incentive to produce new antiinfectives as opposed to drugs for chronic disease states, and the reason for that is you give an antibiotic that may only be given for seven days. As opposed to, let's say a cholesterol-lowering drug, or an anti-depressant, which is given to you for the rest of your life, the fiscal return on the investment is better with those."

In fact, antibiotic development has dropped off dramatically since 1970. During the five-year period ending in 1987, the Food and Drug Administration licensed 16 new antibiotics. But in the five-year period ending in 2007, only five were approved.

