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A vaccine designed to combat Staphylococcal infections including methicillin resistant *Staphylococcus aureus* (MRSA) has been developed by the Birmingham-based company, Vaccine Research International Plc.

A double-blind placebo-controlled clinical trial conducted on 48 male volunteers during 2005 shows that the vaccine is safe and stimulates immune responses.

The subjects were split into three dose groups of 16 where 12 subjects received vaccine and four the placebo. Four vaccinations were given at two-weekly intervals.

Immune responses of the vaccinated subjects were measured against both *Staphylococcus aureus* itself and certain important surface proteins of Staphylococcal bacteria. Tests to measure these responses were carried out on serum samples collected before and after vaccination. The results showed a clear difference between the subjects who received the vaccine compared to those who received the placebo.

Vaccine Research International was formed in 2002 specifically to develop the vaccine now known as SA75. It is now planning to raise money to conduct research in high-risk groups with further trials which are necessary before the product can be licensed.

Staphylococcal infections have become more difficult to treat as the bacteria responsible have become increasingly resistant to traditional antibiotics like methicillin, leading to the emergence of drug-resistant strains such as MRSA

One in five of all hospital-acquired infections are caused by Staphylococci, 40% of which are the antibiotic-resistant MRSA (in Japan the figure is 70%). More recently, *Staphylococcus aureus* with resistance to vancomycin, one of the two remaining drugs effective against MRSA, has been reported (VRSA).

Hospital patients infected by Staphylococci are vulnerable to post-operative septicaemia, cellulitis, pneumonia, osteomyelitis and infections in intra-vascular devices and catheters.

From figures published by the UK National Audit Office, it can be deduced that England has at least 60,000 cases of hospital-acquired Staphylococcal infections a year, costing an estimated £200 million. Between 2003-4, the number of recorded MRSA-related deaths in the UK rose 22%.

In the USA, 291,000 hospital patients were diagnosed with *Staphylococcus aureus* infections in the year 1999-2000. Of these, 126,000 of which were due to MRSA. The cost is at least \$1 billion a year.

Notes for editors:

The high-risk areas for MRSA include:

- Those in poor health likely to be hospitalised with chronic diseases including those of the heart, lung and liver, cardio vascular conditions and diabetes
- Anyone undergoing surgery or dialysis
- People living in communal environments including nursing or residential homes

Staphylococcus infections are becoming increasingly resistant even to the most up-to-date antibiotics and there is no guarantee that the pharmaceutical industry will succeed in continually developing new drugs.

MRSA is no longer just a hospital related condition and has entered the general community (UK National Audit Office).

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