

DEVELOPING AN IMMUNOCONTRACEPTIVE

BIBLIOGRAPHIC REVIEW

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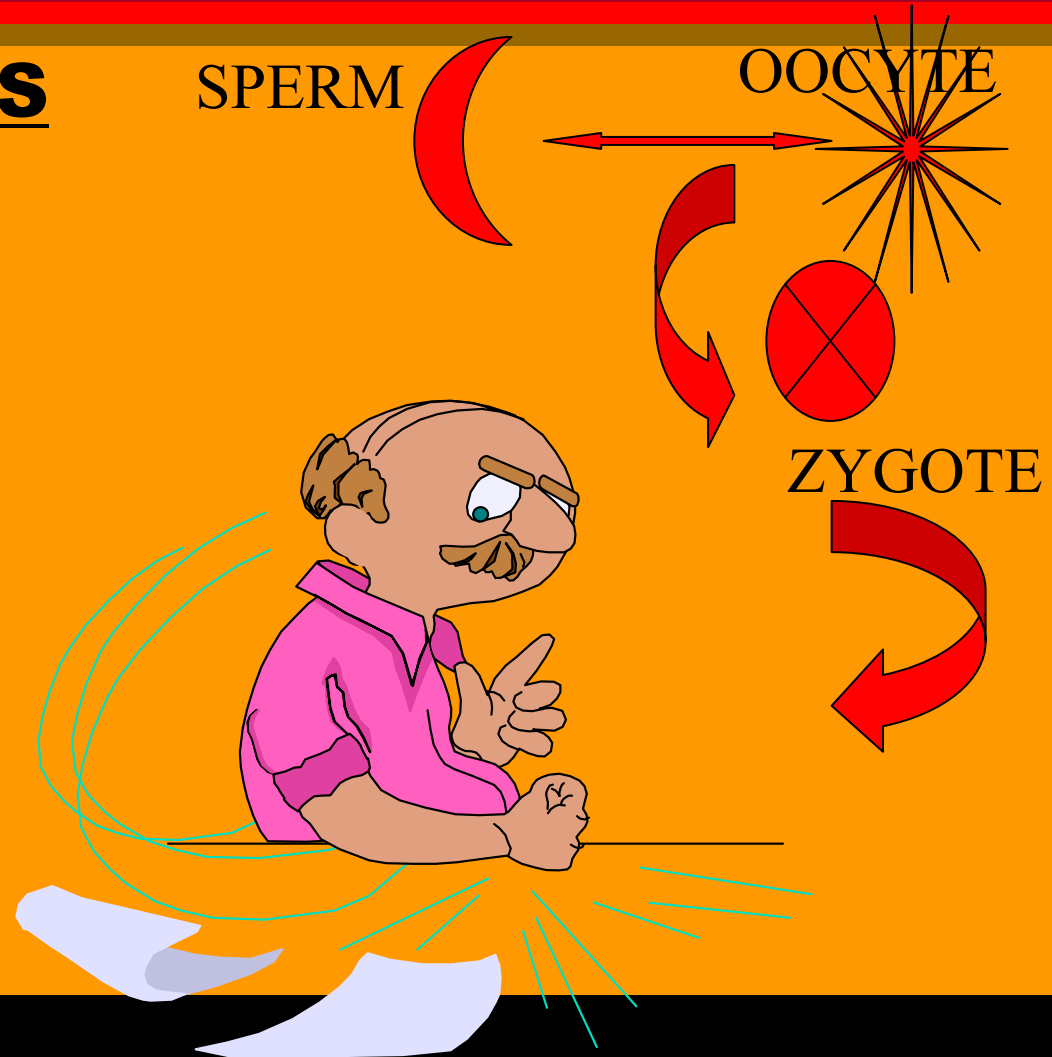
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INTRODUCTION:

- **The idea of immunocontraception is older than 90 years.**
- **Mechanism of action : Just like any other antigen, this stimulates body response with antibodies or immune effector cells which then attack a particular step in the process of fertilisation.**
- **Benefits: being a vaccine it goes world wide ,is easy to administer,compliance is very good, no side effects,hence it can assist in the population growth control and reduction of unwanted pregnancies and maternal mortality.**

RESULTS:

- **TARGET AREAS**
ARE:
- **ENZYMES**
- **SPERM**
ANTIGENS
- **OOCYTE**
ANTIGENS



SPERM ENZYMES:

- **Hyaluronidase exists on sperm surface, it assists in sperm capacitation**
- **Acrosine is within the acrosome, it helps with fusion of sperm-oocyte membranes.**
- **All these cause agglutination of sperm as seen in animal experiments and are candidates for contraceptive development.**

SPERM ANTIGENS : 1

- **Many antigens exist on the sperm membranes such as:**
- ***-fertilisation antigens(FA-1,FA-2)***
these recognise zona-pellucida
- ***-cleavage signal antigen (CS)***
- ***-Sperm protein (SP)***
- ***-PH-20***

SPERM ANTIGEN:2

- **A36 antigen**
- **RSA**
- **NZ-1, NZ-2**
- **MSA-11,MSA-63**
- **And many other known antigens exist.**
- **The target antigens are those used in binding to ZP and those that cause sperm immobilisation. To target sperms is very difficult as they are in millions yet the feasible phase is short in man as we avoid autoimmunity.**

OOCYTE ANTIGENS:

- **The oocyte is protected by zona pellucida that assists in sperm binding, avoiding polyspermy and implantation.**
- **ZP-1,ZP-2,ZP-3 are the antigens that are studied on the oocyte.**
- **Antibodies of ZP inhibit sperm penetration in IVF and animal experiments but they cause ovarian damage.**
- **Use of B-epitope of ZP antigen avoids damage to the ovary but it is immunologically weak.**

CONCLUSION 1

- **There is sufficient evidence of the use of antigens present in the reproductive system to inhibit fertilisation.**
- **Target antigens should not be present all the time in recipients to avoid autoimmunity but give sure protection against pregnancy.**

CONCLUSION 2

- **Future prospects of research in this area should use transgenesis of human antigens into animal models.**
- **The immune contraceptive should use passive means rather than active to avoid adverse reactions in the body and to ensure reversibility. It should be a polyvaccine targeting at more than one point for it to be more potent.**