



Modern concept of embryology and its significance dates back to 800BC Tamil literary work Panjakavia Nigandu-An in-depth comparison

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Abstract

The modern concept of reproductive biology was known to the ancient sage Agasthiayar, a Tamil scholar lived in 800 BC. Based on his classical palm script, a book Panchakaaviya nigandu was prepared and it documented many scientific facts which were fully understood scientifically in late 19th century. If so how the science behind the biological functioning fully understood recently was known to ancient Tamil Sages is really a mystery. The ancient script reproduced from palm scripts narrates the size, shape, the movement of spermatozoa towards egg in the uterus and transfer of 96 elements in the gametes representing the paired chromosomes is also very interesting. The present scientific study of the ancient Tamil literary work brings out the science that may be forming a foundation for present day research,

Key words: Agasthiar, ancient science, fertilization, genetic material

Introduction

The modern scientific growth after the imaging system helps the couples to know the different stages of embryonic growth from the early days of conception. To understand the embryogenesis ultrasound scan 3Ddopler scan and other imaging system are applied by expert medicos to monitor the baby's growth. This is really a great scientific advancement. But The Sage Agasthiar had mentioned in his palm script of 1500 BC replicated in the Panchakaavya Nigandu of 8th century had explained the various stages of embryogenesis with no sophisticated instruments [Arangarasan , 2000]. This is really a great scientific break through. In the present study an eighth century old Tamil literary work "panchakaavya nigandu" was scientifically studied and it was found that the Nigandu exposes many medical facts even before the advent of microscopy and other instruments. The science behind the ancient work was compared with the modern medical approach [Pollard Irina, 1994]. The exposure of our Indian traditional knowledge to the world will boost up our nations image .In the present scientific exploration, the concept and process of fertilization and embryo development documented in 800 BC is validated by the present day science publications [Begley, Firth and Hoult 1980]. .

MATERIAL AND METHOD

For the study the classical Tamil language book written in 8th century reflecting the contents of the Sage Agasthiyar palm scripts of 800 BC was referred. The screening of the ancient book rewritten as Panchakaavya nigandu in 8th century was referred. The scientific truth about

fertilization and embryogenesis in the book was reviewed scientifically. All the verses referred in this work are taken from The Panchakaavya nigandu compiled by Arankarasan [2000] This collection is available in Tamil Manuscripts in the Tanjore Maharaja Sarafoji's Saraswathi Mahal Library, Thanjavur India. . The contents were referred to medical books in obstetrics and gynaecology and embryogenesis.(Pollard Irina (1994) .

Results and discussion

Fertilization

The research on the contents of the ancient Tamil book Panchakavya nigandu showed that it is a treasure house of much scientific truth. The modern scientific knowledge about fertilization and the associated physiological changes were reported in 1500 BC without any sophisticated instruments. In the male with reproductive potential, semen is produced in the epididymis part of testis and it contains spermatozoa. The seminal fluid from the scrotal gland of testicular part after hormonal induction enters into the copulatory organ, penis .Due to high blood flow in to the copulatory organ gets enlarged and gets ready for ejaculation .in to female genital organ, vagina [Mann Tand Lutwak-Mann C. 1981].

MODERN ANDROLOGICAL INFORMATION

In the ancient Tamil book Nigandu in verse 65 lines 3-8, the basics of human reproduction is given in details. The translation is given along with original Tamil verse [Arankarasan 2000]

“Snake like sperm with semen

And with blood form the three gases

Enter the erected bag like penis

Ready to move out from the bulged penis

If finding a fitting vagina

That looks like a full moon”

From these words it is clear that the semen is functional with three components and fertilization will take place if vagina gets bulged and looked like a full moon. This is good information for infertile couple because the genitals of both must be aroused for fertilization. The book explains that semen is snake like and motile. This information about the structure of semen is known after the advent of microscope. But how an 800 BC Sage Agasthiar was able to say sperm is snake like. Further the verse three of Nigandu narrates the following fact. The sperm[vinthu] entering vagina [yoni] and fuses with ovum [Muttai] , which passes through four passage and reaches the uterus[Bindum] . In the uterus the fertilized egg [Andam] is surrounded by watery pond[Pani yenta Theevu [island] According to the modern theory the fertilized egg is implanted in the endometrium of the uterus and surrounded by amnion [a miniature pond . But this internal anatomical and physiological changes were reported in 800 BC without any scanning .This is written in the ancient book as Paniyenta Theevu island [implanted in a watery pool like an island].

In the verse it was given if the sperm gets pushed it enters the ball like egg and fertilization takes place [Vinthu pertaki aganta vassal kadanthu sental karupattum][verse 926 lines 3 -7]. The ancient work says in female sperm moves in to meet the egg and fuse .After fusion it settles in uterus for further development. All this modern facts are known to the ancient Tamil in 1500BC[. Begley , Firth and Hoult 1980 b].

Human Genetics and Nigandu In the human genetics it is reported that the human characters are decided by the chromosomes contributed through sperm and ovum The

chromosomes from father comes via sperm cells and chromosome from mother comes via ovum. After fertilization the 23 chromosomes from father and 23 chromosomes from mother fused in the fertilized egg. The genetic messages present in the genes located in the chromosomes decides the characters of the new born [Hamilton, . and Greep, 1975].

Among the 23 pairs of chromosomes one pair that is 23rd pair is called sex chromosomes. During fertilization if the embryo has the 23rd pair as xx then the embryo will develop in to a female baby. If the 23rd chromosome pair is XY then the embryo will develop in to male. This is a 19th century findings. But this scientific information was discovered by the Sage Agasthiar some 1500 BC back. In the Nigandu this action is mentioned in detail. In the Panchagaavya Nigandu verse 23 and 25 ,it is mentioned that 96 types of characters, the baby receive from sperm and egg. “We the male and female gets united the baby comes with traits” and because of this head, hair, hand, leg, eyes nature of the newborn is decided. It is a miraculous finding. In verse 928 line 4-8 it was mentioned that the sperm brings matter for 96 characters that refers to the 46 chromosomes with genes[from the entire body “Thonuttaru karuvi oothaya maga vintil varum”]. This shows that the 96 characters through the sperm enter the egg and if the 96 characters join with egg and form embryo [bindum] ,it will grow further otherwise no growth will occur. If this happens the menstrual cycles stops[“maventa kanni piravidai yagaiyal mathu natham mayankathe kanisaru”- verse 23].The 96 factors promote the growth of different organs [verse 26].

Facts about Andrology

For infertility the male factor plays an important role. This information is well given in Nigandu even in 800 BC. For fertility, erectile function of male

genital organ is important . The first formed embryo will look like a ball [“Orrulai yenta Muttai polagi “ Verse -27]. Further the fitness of male genital organ for mating is diagnosed by a simple method. If a male makes a cough his scrotal sac should lift up, if not his genital organs is not functioning proper and he is having some problem. But this diagnosis was mentioned in Nigandu-verse 920, line1-2.[“Vathamana val mayilatu thatinalkalsathmana lingamathi sulantidumae”]. During copulation the male organ gets erected mainly because of hormones through rich blood supply .The hormones induces the blood supply and decides the erectile function .This is given in verse 932, line1-3[In married man if abana vayu expressed the penis-lingam will get straightened.]. It is also given that by illegal intercourse, a man gets 21 types of sexually transmitted diseases. Verse 924[“ megam irrupathontu”].

Conclusion

From the above in-depth study of an ancient Tamil script of 800 BC it is clear that the ancient Tamil of 800BC were aware of modern science regarding fertilization and child birth. They were of medicinal plants to rectify the defects also. This was the reason for zero infertility in ancient Tamil society. Understanding the gynecological changes through microscope and scanner was of modern age was known to the ancient tribes lived in 800 BC is really a wonderful system.

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