

Dante and human reproduction: concept of embryogenesis in the Middle Ages

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Sir,

The year 2015 marks the 750th anniversary of the birth of one of the greatest Italian poets, Dante Alighieri, born in 1265 in Florence. Generally, it is less known that Dante was a member of the “*Ars Medicorum et Spetiariorum*” (Guild of Physicians and Apothecaries). Indeed, to take any role in public and political life of the medieval Florence, a citizen had to join one of the guilds. Dante chose to be included among doctors and pharmacists, probably because of his philosophical studies [1]. Indeed, in that period physicians and philosophers often followed a common learning route, studying the same authors, such as Aristotle, Galen, Hippocrates, Avicenna and Averroes. Thus, it comes as no surprise that some medical references may be found in his work, such as eye problems, neurological alterations, internal diseases, psychiatric symptoms, and dermatological disorders [2, 3]. His masterpiece, the “Divine Comedy” – written between 1304 and the year of poet’s death (1321) – may provide some unexpected but useful information about medical knowledge during the Middle Ages. In particular, the medieval conception of human reproduction and embryogenesis clearly appears in some passages of this literary work. Leaving the Fifth Terrace of Purgatory, Dante meets the soul of Latin poet Statius, who illustrates them how human body is generated in uterus: “Yet more concocted it [the blood] descends, where shame forbids to mention [testicles]: and from thence distils in natural vessel [uterus] on another’s blood [menstruation]. There each unite together; one disposed to endure, to act the other, through that power derived from whence it came; and being met, it [sperm] begins to work, coagulating first; then vivifies what its own substance made consist” (Purgatory, XXV, 43–51) [4]. These verses reflect the medieval ideas about genesis of life. According to Hippocratic and Aristotelian theories – newly elaborated by medieval philosophy during the thirteenth century – reproductive function was related to nutrition. Indeed, the sperm was believed to be a residual of blood derived by feeding. According to these theories, after ingestion, food is initially transformed in chyle in the intestinal tract and then, in liver first and heart secondly, it becomes blood. In men this latter, filtering through organs, becomes purer and reaches the testicles, turning into sperm. In his “*Summa Theologica*” (III, 31), Thomas Aquinas (1225–1274), influential scholastic philosopher and theologian, sustained that “*sanguis, qui digestionem quadam, est preparatus ad conceptum, est purior et perfectior alio sanguine*” (“the blood [*i.e.*, sperm], that is prepared for conception through digestion, is purer and more perfect than other blood”). Sperm, combined with menstrual blood in uterus that undergoes the action of male semen, forms a clot that then comes to life. Thus, fecundation appears as a clot derived from male blood (sperm, active principle) and female blood (menstruation, passive principle) [1]. In aforementioned verses, Dante names uterus as “natural vasello” (natural vessel), underlying the female passive role. The separation between an active male and a passive female part in human conception – derived from Aristotle – is also exposed by Dante in his other work, “Convivio” (The Banquet) (IV, XXXI, 4–5). Here the poet states that male semen takes intellect, life and soul in the newly generated organism, while female part has only a passive role: the uterus is only created to welcome and nourish the life that sperm takes [1]. Finally, Statius ends his dissertation, comparing human embryo with a plant and a sea sponge that gradually differentiate (Purgatory, XXV, 52–55), leading some scholars to excessively find pioneering concepts of phylogenesis and ontogenesis in the “Comedy”.

In conclusion, even literary works could provide unexpected information on evolution of knowledge about human reproduction and embryogenesis in past centuries. Commemoration of ancient writers in their anniversary of birth or of death could appear as a timely opportunity to evidence these less-known conjunctions between medicine, science and literature.

References

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Received: November 1, 2014

Accepted: December 12, 2014