

LETTER TO EDITOR

Firstly Documented Beliefs on Drug Teratogenicity

Dear Editor,

Viruses and drugs are well-known teratogens. In 1941, rubella virus was shown to cause severe birth defects such as cataracts, deafness and cardiac defects. Thalidomide received worldwide attention in the 1950s, after over 10,000 neonates were born with malformations^{1,2}. Until early 1940s, it was thought that embryos were protected from environmental agents (such as drugs) by the mother's uterine, abdominal walls and fetal membranes³. In sharp contrast, many physicians in the Middle East medicine schools (Arabic medicine, Persian medicine, Greek medicine, etc.) recommended against consuming certain drugs during pregnancy, not only for the risk of abortion but for the risk of abnormal development. For example, famous Arab physician, botanist and pharmacist Ibn Al-Baytar (1197–1248) in his *Compendium on Simple Medicaments and Foods* quoted this text from Galen (c.129-c.200 AD) when he discusses a plant

Muhammad al-Attar¹
Narges Kiyanie²

1- School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

2- Department of Traditional Pharmacy, Faculty of Traditional Medicine, Tehran University of Medical Sciences, Tehran, Iran

Correspondence:

Muhammad al-Attar
School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran
attarfar@sbm.ac.ir

1- Moore, 2013: 880.

2- Vargesson, 2015: 140–56.

3- Moore, 2013: 880.



named Karafs as saying:

“consuming too much Karafs during pregnancy can cause neonatal blisters and necrotic wounds. Physicians invariably recommended against eating Karafs for they believed it might cause mental retardation and neurodevelopmental disorders by propelling metabolic waste and phlegm towards the brain”⁴. This is clear evidence that this ancient physician had a vast knowledge of environmental teratogens and their mechanism of action over 2000 years ago. It is fascinating how ancient physicians paid attention to the effect of chronically high doses of plants in fetal growth and neurocognitive development; however, more research into the Middle East medicine paradigm is necessary to understand the aforementioned mechanisms.

Besides traditional Chinese and traditional Indian medicine (Ayurveda), Middle East medicine is one of three common alternative medicine schools worldwide⁵. This school of practice inherited a lot from ancient medicine in the Middle East region (Egypt, Iraq, Persia, etc), famous physicians like Hippocrates of Kos (c.460-c.370 BC), Pedanius Dioscorides (c.40-c.90 AD), Galen (c.129-c.200 AD), Rhazes (854– 925), Avicenna (c. 980 –1037) and thousands of others throughout the ancient world. From Al-Andalus (Muslim Spain) to India, the wealth of knowledge of more than ten centuries belongs to this school of thought, which has contributed tremendously to the written heritage of clinical observations and experiences.

In addition to the historical value of drug teratogenicity in the Middle East medicine, it is important for other reasons.

Traditional complementary medicine is generally accepted as one of the safest practices in medicine, and many countries are beginning to incorporate complementary medicine into their health care systems⁶. Production and prescription of complementary medication should follow an accepted algorithm and meet criteria recommended by expert opinion. Careless mass production of complementary medications, combined with excessive or improper usage could make these medications less efficacious or sometimes even harmful.

Given the indispensable role of traditional complementary medicine in developing novel medications, similarly

4- Ibn Al-Baytar, 1992: 311.

5- World Health Organization, 2013: 76.

6- World Health Organization, 2013:

7.



it could have a pivotal role in the investigation of environmental teratogens.

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Qur'an Gate (Persian: Darvāzeh Qur'an) is a historic gate in the north of Shiraz, Iran.

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