



THE AGA KHAN UNIVERSITY

eCommons@AKU

Department of Biological & Biomedical Sciences

Medical College, Pakistan

June 2019

Role of Ajwa date (Phoenix Dactyl L) derived polyphenols in male infertility

Naseer Ahmed

Aga Khan University, naseer.ahmad@aku.edu

Rehana Rehman

Aga Khan University, rehana.rehman@aku.edu

Anwar Gilani

Aga Khan University, anwar.gilani@aku.edu

Follow this and additional works at: https://ecommons.aku.edu/pakistan_fhs_mc_bbs



Part of the [Life Sciences Commons](#), and the [Primary Care Commons](#)

Recommended Citation

Ahmed, N., Rehman, R., Gilani, A. (2019). Role of Ajwa date (Phoenix Dactyl L) derived polyphenols in male infertility. *JPMA. The Journal of the Pakistan Medical Association*, 69(6), 916-916.

Available at: https://ecommons.aku.edu/pakistan_fhs_mc_bbs/760

Role of Ajwa date (*Phoenix Dactyl L*) derived polyphenols in male infertility

Naseer Ahmed, Rehana Rehman, Anwar-ul- Hassan Gilani

Madam, prevalence of male infertility with its associated social and health problems calls for an insight for its elucidation.¹ Over the past few decades, there have been many experimental and clinical studies on the pathophysiology of oxidative stress and its impact on fertility disorders, both in men and women. Oxidative stress impairs sperm function and count, damage to DNA and accelerates the cellular apoptotic functions leading to the inability to achieve conception or lack of development of the embryo.² It has also been observed that intake of a large amount of meat and full fat dairy products results in lower seminal quality in comparison to diet rich in antioxidants like fruit, vegetables and low fat dairy products.³ Medicinal plants have been tested in the treatment of sperm abnormalities on account of their antioxidant and anti-inflammatory properties that endorse sperm production and increase blood testosterone levels.⁴

The capacity of human sperm fertilization predominantly depends on integrity of sperm membrane and its motility. Oxidative stress and reactive oxygen species like superoxide anion and hydrogen peroxide, decrease sperm motility as well as membrane integrity due to increase in membrane lipid peroxidation (LPO). Ferulic acid (FA) has recently been shown to scavenge oxygen free radicals and increase the intracellular cAMP and cGMP and hence improve sperm motility in a study done by Zheng et al.⁵ Since FA is an active ingredient of Ajwa dates (*Phoenix dactyl L*), we recommend its use in the treatment of male infertility. Ajwa has already been proposed to be used in treatment of ischaemic heart

diseases on the basis of its role to prevent free radical formation by inhibition of degradation of endogenous antioxidants like Nitric Oxide.⁶ Since FA is known to be present in Ajwa dates as its main ingredient and its role in attenuating oxidative stress is well established, we would like to explore the use of Ajwa dates to improve sperm viability and motility.

"A healthy diet is not only a good way of avoiding illness, but could also have an impact on improving seminal quality".³ Further studies are required to know the effect at molecular level that is responsible for improvement in sperm motility and reproductive functions.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Sources: We received support from Department of Biological and biomedical sciences, Aga Khan University, Karachi, Pakistan.

References

1. Alam F, Khan TA, Rehman R. Stress of infertility: Can the couple cope? *J Pak Med Assoc* 2018;68:679-680.
2. Walczak-Jedrzejowska R, Wolski JK, Slowikowska-Hilczer J. The role of oxidative stress and antioxidants in male fertility. *Cent European J Urol* 2013;66:60-7. doi: 10.5173/cej.2013.01.art19.
3. Mendiola J, Torres-Cantero AM, Moreno-Grau JM, Ten J, Roca M, Moreno-Grau S, et al, Food intake and its relationship with semen quality: a case-control study. *Fertil Steril* 2009;91:812-8. doi: 10.1016/j.fertnstert.2008.01.020.
4. Tahvilzadeh M, Hajimahmoodi M, Toliyat T, Karimi M, Rahimi R. An evidence-based approach to medicinal plants for the treatment of sperm abnormalities in traditional Persian medicine. *Andrologia* 2016;48:860-79. doi: 10.1111/and.12676.
5. Zheng RL, Zhang H. Effects of ferulic acid on fertile and asthenozoospermic infertile human sperm motility, viability, lipid peroxidation, and cyclic nucleotides. *Free Radic Biol Med* 1997;22:581-6.
6. Khan M, Siddiqui N. Role of Ajwa in the treatment and prevention of ischaemic heart disease. *J Pak Med Assoc* 2017;67:1954.

.....
Department of Biological and Biomedical Sciences, Aga Khan University, Karachi.

Correspondence: Naseer Ahmed. Email: dr.naseer99@gmail.com