Ibuprofen alters human testicular physiology to produce a state of compensated hypogonadism - DTU Orbit (31/01/2019)

Ibuprofen alters human testicular physiology to produce a state of compensated hypogonadism

Concern has been raised over increased male reproductive disorders in the Western world, and the disruption of male endocrinology has been suggested to play a central role. Several studies have shown that mild analgesics exposure during fetal life is associated with antiandrogenic effects and congenital malformations, but the effects on the adult man remain largely unknown. Through a clinical trial with young men exposed to ibuprofen, we show that the analgesic resulted in the clinical condition named “compensated hypogonadism,” a condition prevalent among elderly men and associated with reproductive and physical disorders. In the men, luteinizing hormone (LH) and ibuprofen plasma levels were positively correlated, and the testosterone/LH ratio decreased. Using adult testis explants exposed or not exposed to ibuprofen, we demonstrate that the endocrine capabilities from testicular Leydig and Sertoli cells, including testosterone production, were suppressed through transcriptional repression. This effect was also observed in a human steroidogenic cell line. Our data demonstrate that ibuprofen alters the endocrine system via selective transcriptional repression in the human testes, thereby inducing compensated hypogonadism.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Integrative Systems Biology, University of Copenhagen, Copenhagen University Hospital, Université de Rennes 1, Bispebjerg University Hospital, Université Nantes Angers Le Mans, Centre Hospitalier Universitaire de Rennes, University of Southern Denmark
Number of pages: 10
Pages: E715-E724
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Proceedings of the National Academy of Sciences of the United States of America
Volume: 115
Issue number: 17
Article number: E4143
ISSN (Print): 0027-8424
Ratings:
BFI (2019): BFI-level 2
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 8.59 SJR 6.092 SNIP 2.626
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.56 SJR 6.576 SNIP 2.642
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 8.84 SJR 6.814 SNIP 2.691
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 8.86 SJR 6.898 SNIP 2.734
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 9.5 SJR 7.073 SNIP 2.738
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 9.49 SJR 6.868 SNIP 2.697
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes