Partial Androgen Deficiency of Aging Male (P.A.D.A.M.) might in part be due to excessive organochloride pesticide (OC) impregnation

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Partial Androgen Deficiency of Aging Male (P.A.D.A.M.) is found together with a high FSH and/or LH plasma level in around 30 per cent of males aged more than 50 (“true andropause”); more often however the low testosterone levels coexist with a sub-normal or low LH (“central hypogonadism”). Although this has been previously related to a “reset” of the gonostat [3] or to the interference of intercurrent disease, the interference of oestrogen like “endocrine disrupter” has to our knowledge never been tested in aging male.

Taking advantage of a W.H.O. health aging program related to P.A.D.A.M. incidence in the Liege area [5], we measured fasting, morning, free calculated testosterone (fTc) [6], LH (RIA) and O.C. (aldrin, endrin, op’DDT, op’DDE, pp’DDT and pp’DDE) [1] and oestrogen-sensitive neurophysins (IRN) [4] in a group previously described [2]. Intercurrent diseases (IC) and body mass index (BMI) were also recorded.

Results were classified in 3 groups according to fTc and LH: “Normal” (N) (fTc > 50 ng/l) and LH < 10 mU/ml, n = 32; “Central Hypogonadism” (CH) (fTc ≤ 50 ng/l, LH ≤ 5 mU/ml) and “Peripheral Hypogonadism” (PH) (fTc ≤ 50 ng/l, LH ≥ 10 mU/ml).

Mean age (60.3 ± 5.7), BMI (26.7 ± 3.9) and IRN (1.3 ± 0.55 ng/ml) were similar in the 3 groups. pp’DDE was slightly but non significantly increased in C.H. (4.82 ± 4.16 µg/l) and P.H. (5.73 ± 6.67 µg/l) compared to N (4.09 ± 3.06).

I.C. were more frequent in C.H. (46.15 %) than in N (10.53 %) and P.H. (18.75 %) (p < 0.04).

If one considers fTc only, it appears that males with pp’DDE ≤ 5 µg/l (n = 41) (59.6 ± 23.2 µg/l) (p < 0.03).

Those preliminary results suggest that an oestrogen like action of pesticide on gonadotrop is less likely although a mixed testicular and/or hypothalamo-hypophysial action at high level of pp’DDE may not be excluded. Further they confirm the incidence of intercurrent diseases in functional hypogonadotrop hypogonadism during aging in male.

REFERENCES