CLINICAL IMPLICATIONS OF MEASURING PROLACTIN LEVELS IN MALES OF INFERTILE COUPLES

Lotti F., Corona G., Maseroli E., Rossi M., Silverii A., Degli Innocenti S., Rastrelli G., Forti G., Maggi M.
Sexual Medicine and Andrology Unit, Department of Experimental and Clinical Biomedical Sciences, University of Florence, Florence, Italy

Introduction. -The role of prolactin (PRL) in males is not clear.
-Animal models: PRL does not play a major role in male reproduction; however, trophic action on male accessory glands often observed.
-Studies in humans are scanty.

Aim. To systematically evaluate possible clinical and ultrasound correlates of PRL in males of infertile couples.

Methods: Out of 288 consecutive males of infertile couples, 269 (36.6±4.4 years) without genetic abnormalities were studied.
All men underwent, during the same day, an evaluation of:
-clinical characteristics,
-scrotal and transrectal colour-Doppler-ultrasound (CDUS), before and after ejaculation,
-biochemical parameters
-semen parameters, including semen interleukin 8 levels (sIL-8)
-erectile function: IIEF-15-erectile function domain
-ejaculatory function: Premature Ejaculation Diagnostic Tool (PEDT)
-prostate-related symptoms: NIH-CPSI and IPSS
-psychological traits: Middlesex Hospital Questionnaire (MHQ)

Results:
1) Among semen parameters: only positive association between PRL and ejaculate volume, even adjusting for age, total testosterone and TSH (Fig. 1A)

2) In a logistic ordinal model, adjusting for the aforementioned confounders and ejaculate volu
PRL was negatively associated with delaying ejaculation, according to PEDT#1 score (Wald=4.65,p<0.05) (Fig. 1B).

3) Among scrotal and transrectal ultrasound features:
positive association between PRL and seminal vesicles (SV) volume and inhomogeneity, before and after ejaculation, and with deferential ampullas diameter. (Fig. 2, A-D)

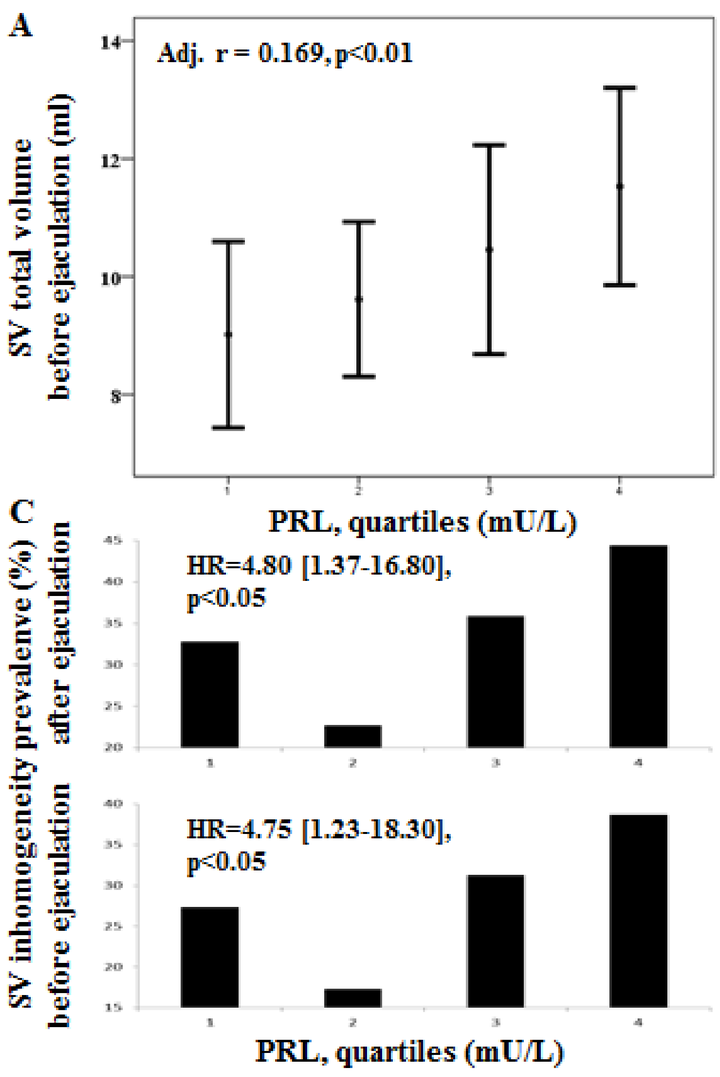

Fig.2

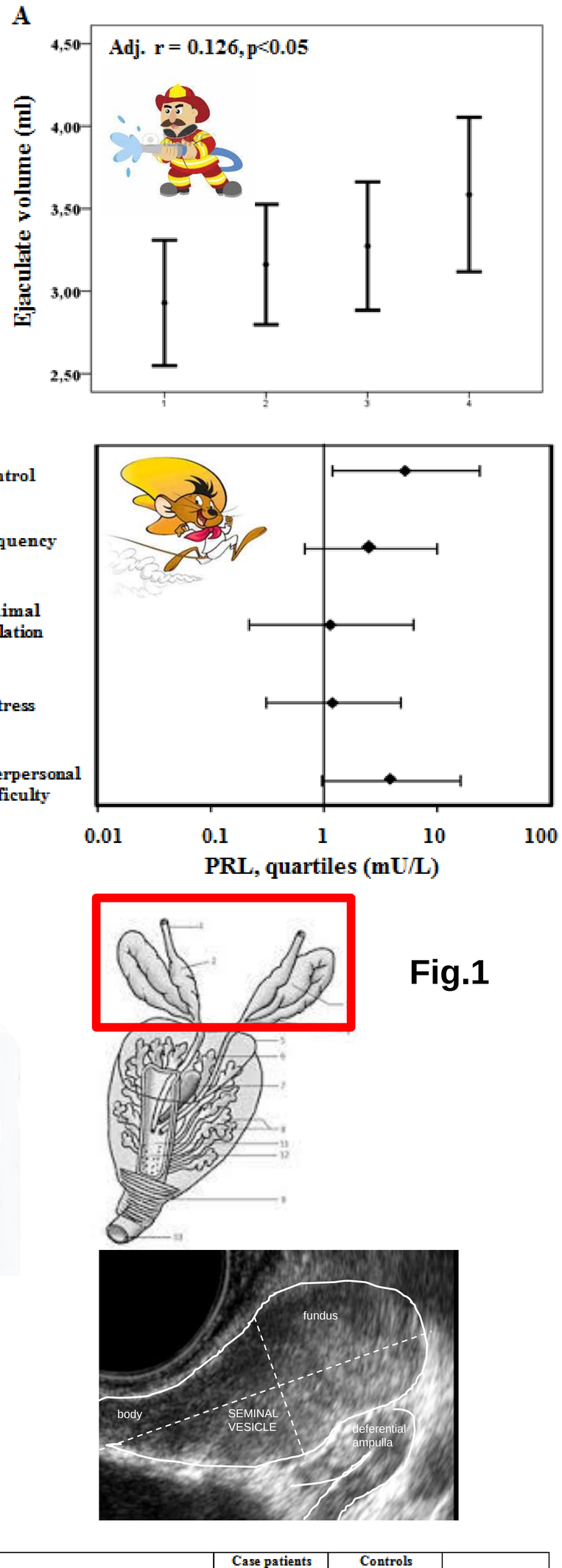

Fig.1

-Associations with PRL confirmed in nested 1:1 case-control analysis (Table) .
(*case patients:* subjects with PRL levels below 140 mU/L,
which predicts a SV total volume below the median value of the cohort)

-No associations between PRL and other clinical parameters.

Conclusions.
-For the first time, this study extends the concept of a
trophic effect of PRL on male accessory glands from animals to humans.

-We report a positive association among
PRL and ejaculate and SV volume, before and after ejaculation.

-Low PRL is associated with a lessened ability to control ejaculation.

	Case patients (n=139)	Controls (n=139)	p
Age	37.4±7.6	37.3±7.6	0.968
Total testosterone (nmol/L)	16.6±5.6	16.2±5.7	0.587
TSH (mU/L)	1.6±0.9	1.9±1.5	0.108
Ejaculate volume (ml)	3.0±1.7	3.5±1.9	**0.022**
Sperm concentration,*10^6/ml	34.1±82.4	29.0±41.7	0.517
Spermatozoa per ejaculate,*10^6/ml	78.6±129.6	83.1±117.1	0.758
Sperm progressive motility, %	34.8±20.4	32.5±20.8	0.407
Sperm morphology, % normal forms	7.4±7.5	6.9±7.7	0.629
PEDT #1 score	1.4±1.1	1.1±1.0	**0.045**
PEDT #1 score ≥ 1 (%) (any failure in controlling ejaculation)	76.3	63.3	**0.049**
SV total volume before ejaculation at CDU	8.1 [4.7-12.8]	9.8 [6.6-14.6]	**0.008**
SV total volume after ejaculation at CDU	5.0 [3.0-7.8]	6.3 [3.7-10.8]	**0.017**
SV texture inhomogeneity before ejaculation (%) at CDU	27.3	41.7	**0.012**
SV texture inhomogeneity after ejaculation (%) at CDU	21.6	36.0	**0.009**
Deferential ampullas mean diameter (mm) at CDU	4.6±1.0	4.9±1.2	**0.044**

Table 3. Comparisons between subjects with prolactin (PRL) < 140 mU/L (case patients) and age, total testosterone, TSH-matched controls. Data are expressed as mean ± SD or as median (quartiles) when appropriate, and as percentages when categorical. TSH, thyroid-stimulating hormone; PEDT, Premature Ejaculation Diagnostic Tool (Symonds et al., 2007); SV, seminal vesicles; CDU, colour-Doppler ultrasound.