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CPPS AND SEMEN QUALITY OF KOREAN MEN IN THEIR THIRTIES

Hypothesis / aims of study

A population based study showed that LUTS are highly prevalent among men and women aged >40 years (1). In Korea, more and more younger males, recently, are complaints of LUTS. Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is a debilitating condition diagnosed in the presence of chronic pelvic pain and lower urinary tract symptoms (2). We aimed to evaluate the prevalence of CPPS in Korean young men, investigate its relationship with semen qualities, reproductive hormones and prostatic calcifications, and, furthermore, examine the effects of medical intervention on CPPS and semen quality.

Study design, materials and methods

A prospective cross-sectional study consisted of 314 men who sought general evaluation for andrology or prostate check-up at our urology hospital between April, 2010 and Mar, 2011. Statistical significance was defined as a p-value < 0.05.

Results

Table 1. Characteristics of study participants.

Number of patients		CPPS **(N=74)**	No CPPS **(N=240)**	*P* value[1)]
Mean Age±SD, yrs	Mean±S.D	33.66±2.7	33.87±3.03	0.6032
	min-max	29-39	26-39	
	cil-ciu	33.04-34.29	33.48-34.25	
Mean Testis volume±SD, mL	Mean±S.D	19.94±4.9	19.92±5.29	0.9755
	min-max	10-25	6.5-30	
	cil-ciu	18.8-21.07	19.25-20.59	
Prostate Volume by TRUS, ml	Mean±S.D	21.39±2.01	21.79±1.93	0.1172
	min-max	15.9-25.4	14.9-26.1	
	cil-ciu	20.92-21.85	21.55-22.04	
Mean number of **ejaculations** per month	<1/month	7 (9.46%)	0 (0.00%)	**<.0001**[2)]
	1/month	23 (31.08%)	0 (0.00%)	
	2/month	28 (37.84%)	0 (0.00%)	
	3/month	13 (17.57%)	29 (12.08%)	
	4/month	3 (4.05%)	45 (18.75%)	
	5</month	0 (0.00%)	166 (69.17%)	
Mean **sitting hours** at work per day±SD, hrs	Mean±S.D	10.23±1.26	8.11±0.41	**<.0001**
	min-max	8-12	8-10	
	cil-ciu	9.94-10.52	8.06-8.17	
Mean **BMI**±SD, Kg/m^2	Mean±S.D	25.28±2.54	23.69±3.37	**<.0001**
	min-max	20.89-33.52	17.21-41.32	
	cil-ciu	24.69-25.87	23.26-24.12	
Smoking	never	31 (41.89%)	140 (58.33%)	**0.0054**[3)]
	yes	31 (41.89%)	55 (22.92%)	
	ex	12 (16.22%)	45 (18.75%)	
Mean spermatozoa **count**±SD, *10^6/ml	Mean±S.D	12.76±28.91	86.62±45.42	**<.0001**
	min-max	0.8-128	0.6-238	
	cil-ciu	6.06-19.46	80.85-92.4	
Mean number of **WBC** in semen±SD, *10^6/ml	Mean±S.D	6.67±2.51	0.16±0.49	**<.0001**
	min-max	0-8.2	0-4	
	cil-ciu	28.46-34.65	20.04-22.78	

1) Independent t-test, 2) Fisher's exact test, 3) Chi-square test, cil=95% CI low

Table 2. Semen quality of the treated patients with CPPS before and after medical treatment

Number of patients		Pre-med (N=64)	Post-med (N=64)	Difference	*P* value[1)]
Mean ejaculated semen volume, ml	Mean±S.D	2.75±1.3	2.72±1.45	-0.03±1.95	0.9137
	min-max	0.8-7	0.5-7.7	-5.2 – 6.5	

	cil-ciu	2.42-3.07	2.36-3.08	-0.51 - 0.46	
Mean spermatozoa **count**±SD, *10^6/ml	Mean±S.D	52.6±30.38	85.97±37.57	33.38±40.42	**<.0001**
	min-max	2-140	1.2-171	-92-150	
	cil-ciu	45.01-60.18	76.59-95.36	23.28-43.47	
Mean **motility** of spermatozoa±SD, %	Mean±S.D	37.19±13.4	42.27±12.94	5.08±17.72	**0.0252**
	min-max	6-58	4-72	-28-56	
	cil-ciu	33.84-40.53	39.03-45.5	0.65-9.5	
Mean **vitality** of spermatozoa±SD, %	Mean±S.D	48.42±14.73	52.92±12.27	4.5±16.87	**0.0367**
	min-max	10-71	13-76	-27-48	
	cil-ciu	44.74-52.1	49.86-55.99	0.29-8.71	
Mean **strict morphology** of spermatozoa±SD, %	Mean±S.D	5.04±1.83	5.45±1.81	0.41±2.25	0.1539
	min-max	0.5-10	0.5-10	-5-7	
	cil-ciu	4.58-5.5	4.99-5.9	-0.16-0.97	
Mean number of **WBC** in semen±SD, *10^6/ml	Mean±S.D	2.29±3.07	0.54±2.17	-1.74±1.81	**<.0001**
	min-max	0-20	0-16	-6.2-0.8	
	cil-ciu	1.52-3.05	0-1.08	-1.29--2.2	

1) paired t-test, cil=95% CI low, ciu=95% CI upper

Interpretation of results

Number of ejaculations, mean sitting hours at work, semen quality as well as BMI and smoking showed significant differences between the patients with CPPS and the control. The combined regimen of ciprofloxacin 250mg bid with zaltoprofen 80mg bid as well as an alpha-blocker (Tamsulosin HCl 0.2mg 1T qd) appeared to be effective in not only improving semen quality, especially, the sperm concentration, but also relieving pain that was the most disturbing sign and symptom.

Concluding message

CPPS with a notable prevalence among Korean men in their 4^{th} decades affects semen qualities and hamper achieving fatherhood. Hence, our results argue in favour of the importance of prostate functionality in the quality of the semen, more specifically, regarding sperm concentration. Proper treatment of CPPS appeared to be resulting in the statistically improved semen quality. Men, therefore, require proper evaluation of CPPS and treatment by urologists in advance of planning a natural conception to improve chances of natural conception before proceed to assisted reproductive technology (ART), in haste.

Specify source of funding or grant	**NONE**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
Is this a Randomised Controlled Trial (RCT)?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Zaii Hospital Ethics Commitee**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**