347 Covid 19 and erectile dysfunction comparison in men before and after recovery

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Hypothesis / aims of study

Several authors have demonstrated the Covid-19 influence on erectile function. In Sub-Saharan Africa, there is not enough information assessing the relationship between Covid-19 and erectile function. The aim was to evaluate the Covid-19 impact on the erectile function of patients monitored and cured of this condition in our environment.

Study design, materials and methods

This is a descriptive study with analytical purposes which took place from June 1, 2020 to May 31, 2021. The target population was male patients admitted the Covid-19 Patient Treatment Center and who left there alive. Are included in this study - All male patients surviving after Covid-19 disease. - Patients hospitalized at the Covid-19 Treatment Center. - Have given informed consent. Non-inclusion criteria: Were not included in this study - Male patients who have not given informed consent. Exclusion criteria: Any participant who did not answer a minimum of questions was excluded. Sampling and sample size: Simple probability and random sampling were used to collect data for this study. The sample size was calculated using this formula: $n \geq (z^2 \times [p][1-p])/d^2$ n = sample size z = 1.96 [confidence coefficient] p = prevalence of erectile dysfunction in patients during Covid-19 (P = 8.7) (8). d = 0.05 [margin of error or imprecision variance reflecting the desired degree of absolute precision]. The sample size thus calculated was $n \geq [1.96]2x0.087x0.93 / [0.05]2= 122$. Including the 10% of non-responders, we obtained n ≥134 patients. A total of 254 patients were interviewed, but after the survey, a final sample of 198 participants was obtained based on the selection criteria. 2.1.3.1.Data collection: The collection was carried out on the basis of a survey sheet containing the IIEF5 questionnaire, previously validated in the Congolese Language Lingala and in Kikongo. Before starting data collection, we obtained approval from the Head of the Covid-19 treatment center and the Director of Kinshasa University hospital. Three investigators were selected from among the trainee doctors and were previously trained on the collection technique. This training was carried out in one session before data collection. Conducting an interview and filling out data collection sheets formed the basis of the materials developed for field workers. The development of this work required the surgeons, , trainee doctors and an expert in biostatistics assistances brought together as a research team. In order to obtain the respondents reactions to the questionnaire and to estimate the duration carried out by investigators, a pre-survey was carried out among patients hospitalized in the urology department of the Kinshasa University hospital . The survey itself took place from June 1, 2020 to May 31, 2021. Each investigator obtained the informed consent form which had to be signed at the end by the respondent. Three collection techniques were used: The documentary review: the patients' medical files allowed us to record the contact details of the respondents (home address, telephone number, etc.) and their background. Anthropometric observation: the respondents were weighed using a scale and their height was measured using a measuring tape. These parameters helped us to calculate our respondents body mass index. The interview: the questionnaire consisted of three questions types: open, closed and semi-closed; it was systematically offered to each person intended for the investigation. The questionnaire used focused on sociodemographic, clinical, erectile function evaluation by the IIEF5 score and evolution. The interviews were conducted in French and/or Lingala. 2.1.3.2.Variables of interest: Sociodemographic data: age, profession, marital status, of education level, origin, number of sexual partners. Clinical data: body mass index, history, erectile function using the international index of erectile function in its simplified version (IIEF5)evaluation . erectile function evolution. 2.1.3.3.Operational definitions: Erectile dysfunction Severity : IIEF-5 total score Interpretation. 1 to 7: severe erectile dysfunction 8 to 16: moderate erectile dysfunction 17 to 21: mild erectile dysfunction 22 to 25: normal erectile function Body mass index (BMI): calculated as the result of dividing weight in kilograms by the square of height in meters. Underweight: BMI <18KG/m2: Normal BMI: between 18 and 25 kg/m2 Overweight: between 25.1 and 29.9 kg/m2 Obesity: BMI≥30 kg/m2 2.2.-Statistical analyses: 2.2.1 Data processing and analysis: After analysing the data, a first quality control was carried out in the field to ensure their completeness, precision and reliability. A second consistency check of the responses was carried out to make corrections to certain inconsistencies noted with a view to guaranteeing the results validity. All these operations also made it possible to rule out inconsistent and missing data which should not be recovered. The questionnaires were numbered using codes for better identification. Data processing was carried out in several stages Manual processing of questionnaires; Entry, purification and encoding on Excel 2010; The analysis was carried out using SPSS version 22.0 software; The results are presented in tables and figures form. 2.2.1.1.Descriptive phase: The descriptive analyzes carried out are the mean and the standard deviation for the quantitative data with a Gaussian distribution, the median for the data with a non-Gaussian distribution. 2.2.1.2. Analytical phase: Pearson's chi-square test or Fisher's exact test as appropriate was performed to compare proportions. Student's T test was performed to compare means for normally distributed data. Logistic regression was used to search for the factors associated with erectile dysfunction determinants in patients who survived after Covid-19 disease in univariate analysis, only the significant variable was retained. All variables significant in univariate analysis were introduced into multivariate analysis to eliminate confounding factors with the the odds ratio (OR) and their confidence interval calculation . The adjusted odds ratio (Ora) calculation made it possible to assess the association degree. For all tests carried out, the p value <0.05 was the statistical significance. Threshold. 2.3. Ethical consideration: Beforehand, the study protocol was submitted, analyzed and then authorized to be carried out by the national health ethics commission (number 473/CNES/BN/PMMF/2023).

Results and interpretation

PThe patients average age was 43±14 years with extremes 19 and 67 years. 49.5% of patients presented erectile dysfunction before Covid-19 compared to 60.6% after Covid-19. Moderate erectile dysfunction increased from 6.1% before Covid-19 to 29.2% after. Severe incidence went from 0% before Covid-19 to 3.3% after. Age, obesity, diabetes mellitus, hypertension, alcohol and marital status were significantly associated with the onset of erectile dysfunction after Covid-19. After adjustment in multivariate analysis, age ≥50 years multiplied the risk of erectile dysfunction by 5, obesity multiplied this risk by 3, diabetes mellitus and hypertension multiplied this risk respectively by 6 and 6, and consumption of Alcohol increases the risk of erectile dysfunction by 8.

Table 1. Erectile dysfunction Determinants in patients followed and cured after COVID-19 infection hospitalization

Variables	Univariate analysis		Multivariate analysis	
	P	OR (IC95%)	p	ORa (IC95%)
Age				
<30 ans		1		1
30-49 ans	0,390	1,40(0,65-3,02)	0,435	1,45(0,57-3,66)
≥ 50 ans	<0,001	6,13(2,49-15,08)	0,010	4,74(1,46-7,36)
Marital status				
Single		1		1
Married	0,017	2,23(1,15-4,31)	0,825	1,10(0,47-2,60)
Obesity				
No		1		1
Yes	0,023	2,81(1,15-6,83)	0,037	2,96(1,07-8,20)
Diabetes				
No		1		1
Yes	0,001	11,03(2,54-17,88)	0,023	6,46(,29-9,85)
HBP				
No		1		1
Yes	0,001	12,67(2,93-17,37)	0,036	5,50(1,12-7,10)
Alcohol				
No		1		1
Yes	0,001	3,42(1,67-7,00)	<0,001	7,56(3,36-17,00)

Table 2. Comparison between clinical characteristics of patients recovered from COVID-19 and erectile dysfunction.

Variables	Normal n=78	Erectile dysfonction n=120	p
CVRF			
Obesity	3(3,8)	10(8,3)	0,014
Diabete	2(2,6)	27(22,5)	<0,001
HBP	2(2,6)	30(25,0)	<0,001
Alcohol	12(15,4)	46(38,3)	<0,001
Tobacco	9(11,5)	20(16,7)	0,216
Clinical features			
Weight	74,2±8,8	166,1±6,8	0,156
Size	76,3±10,7	165,7±7,3	0,660
BMI	26,8±2,3	27,8±3,3	0,030

*CVRF : cardiovascular risk factors.

Conclusions

patients with COVID-19 had a high of erectile dysfunction prevalence. These patients follow-up is necessary to determine whether they are permanent or not.

References

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