DIGITAL INFLECTION RIGIDOMETER COMPARED TO THE RIGISCAN AND ECO DOPPLER FOR MEASURING THE ERECTION QUALITY

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Introduction: invasive explorations produce patient’s psychological inhibition.

Objectives: to prove that the digital inflection rigidometer (DIR), used by the patient himself at the clinic or at home allow us to know accurately, in a non-invasive way and in only 15 seconds, the penis axial rigidity, the relative intracavernosal pressure and the glans temperature. We compare the data obtained from dir, rigiscan and eco-doppler.

Methods: at the clinic, we injected a group of 8 patients -group a- with 15 mcgs. Pge1 and they were monitorized with the rigiscan, advising them, that in case they and an erection, they should use the dir with a frequency of 5 minutes. Eco doppler evaluation was applied to an other group of 7 patients -group b- five minutes after having been also injected 15 mcgs. Of pge1. Measurements were made when there was some rigidity.

Results: with group a we observed that in three cases the rigiscan showed a circumferential rigidity between 60 and 80% that did not correspond to the axial rigidity achieved between 300 and 400 grs.. The eco doppler practised on group be showed normal vascular anatomic parameters but did not correspond to a normal axial rigidity, above 500 grs.

Conclusion: the dir is the only equipment able to measure the axial rigidity accurately, the relative intracavernosal pressure and the glans temperature in a non-invasive way and it offers the possibility of being used by the patient himself either at the clinic or at home.

INTRODUCTION

There are many examples in medical literature which illustrate the psychological inhibition of patients when they undergo painful explorations for the study of erectile dysfunction (rigiscan-real time, eco-doppler, cavernosometry, etc...) And it is often observed different reactions to the same stimulus provoked under different circumstances (in different atmospheres, days and even by various specialistes, e.g.). This is quite misleading.

When diagnosing an erectile dysfunction, every andrologist aims:

1. to know the quality of the erection through its rigidity.
2. to evaluate the effect on the erection of an erotic stimulus.
3. to know the effect of the vasoactive drugs.
4. to know the rigidity of the penis as result of the stimulus.
5. to be able to measure the duration of an erection
6. to measure the variations in the erection due to positions, movements or other circumstances.
7. to obtain this data with the fastest, most reliable, painless system.

During the past two years we have been using the digital inflection rigidometer in our clinic to evaluate the quality of our patients’ erections. In many occasions the
patients themselves have used this device at home.

In the following study we aim to compare the results of the digital inflection rigidometer, the rigiscan and the eco-doppler in the diagnosis of e.d. the table illustrates their functions and their characteristics.

**OBJECTIVES**

The **Digital Inflection Rigidometer** measures the axial rigidity of the penis in grams, the duration of the useful erection, the relative intracavernosal pressure (related to the systolic arterial pressure) and the temperature of the glans in only 15 seconds.

The Rigiscan measures the circumferential rigidity and the duration of an erection. The measurements can last between 30-60 minutes.

The eco-doppler measures the arterial diameter, the velocity of the blood flow and the peripheral resistences.

**METHOD**

We have chosen 15 patients who referred erectile dysfunction between the ages of 40 and 60.

We divided them into two groups, 8 patients in group "a" and 7 patients in group "b". In order to study the erectile dysfunction, all patients in group a and b were injected 15 mcgrs of PGE1.

Afterwards, the 8 patients in group a were monitorized with the rigiscan-real time and their axial rigidity was measured with the Digital Inflection Rigidometer.

The 7 patients in group b underwent the eco-doppler test and their axial rigidity was also measured with the digital inflection rigidometer.

**Group (A)**

After an injection of PGE1 and once the two sensors of the rigiscan were on place, we requested the patient to chose an erotic magazine and we led him to a room where he had the necessary privacy. Afterwards, we showed him how to use the dir and indicated the patient that when he had reached maximum erection, he should take a measurement every 4-5 minutes. He could make up to 7 measurements, of 15 seconds of duration each one.

Once we obtained the data from the different devices used, we were able to state that the circumferential rigidity between 60-80% provided by the rigiscan did not correlate to the data registered by the dir, which ranged between 300-450 grs. Of axial rigidity.

3 of the 8 patients used the dir at home, after auto-injection of vasoactive drugs. The rigidity obtained then was between 900-1200 grs., which was considerable superior to the one obtained in the clinic.

**Group (B)**

After been injected 15 mcgrs. Of PGE1, the 7 patients of group b underwent the eco-doppler test. Afterwards, like we did with group a, we showed each one how to use the
dir and indicated the patient that when he had reached maximum erection, he should take a measurement every 4-5 minutes. He could make up to 7 measurements, of 15 seconds of duration each one.

Once all the test were finished, we could state that the anatomic vascular parameter of all the 7 patients provided by the eco-doppler ranged within normality, while only 2 patients achieved an axial rigidity of 500 grs., which meant that normal anatomic vascular parameters were not realible indicators of a sufficient axial rigidity.

On the following table we can observe the advantages that present the three devices when used for the diagnosis of e.d.

Each device provide on a graphics the data registered, which document the examination.

CONCLUSIONS

After comparison of the three devices, we consider that the Digital Inflection Rigidometer is the most reliable device to know the quality of an erection, and thus, to come to an accurate diagnosis of an erectile dysfunction. It provides in a fast and painless way reliable information about:

- penile axial rigidity, given in grams;
- relative intracavernosal pressure and glans temperature, presenting the advantage that the measurement can be taken by the patient himself, either at the clinic or at home, increasing his selfconfidence and avoiding this way the psychological inhibition at the clinic.

At the same time, the digital inflection rigidometer provides us with relevant information regarding the quality of the erection in the following cases:

- erectile disfunction (E.D.) with an arterial background.
- E.D. with a venous background.
- E.D. with a psychological background.
- E.D. of a mixed origin.
- control of the effect of vasoactive drugs.
- control of the effect of video-sex-stimulation
- measurement of nocturnal erections.
- control of practical results of vacuum plus treatment.
- control of practical results of venous surgery
- control of practical results of arterial surgery.
- control of rigidity after implantation of the prosthesis
- control of failures of hydraulic prosthesis.