

# Predicting pelvic visceral hypersensitivity from the discomfort of Lugol' test during colposcopy

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**Abstract. – OBJECTIVE:** Assessing the pelvic visceral hypersensitivity after Lugol' staining during colposcopy.

**PATIENTS AND METHODS:** On an unselected sample of 91 patients, pelvic discomfort and discomfort during menstruation, sexual intercourse, defecation, urination were assessed (numeric rating score from 0 to 10) before colposcopy. Few minutes after Lugol' staining, it was assessed the discomforting perception provoked by iodine by using the same numeric rating scale. All those scores were increased by 1 to allow regression models (linear, logarithmic, inverse, cubic, quadratic, exponential).

**RESULTS:** The only significant models were the linear, logarithmic and inverse ones for pelvic discomfort overall score and the linear one for sexual intercourse score. A discomfort score of 4.5 or less after Lugol' staining should be a normal reaction to iodine nociception in the vagina.

**CONCLUSIONS:** Lugol' staining during colposcopy causes discomfort related with visceral nociception. The rise in numeric rating score after colposcopy can be used for screening pelvic visceral hypersensitivity.

*Key Words:*

Pelvic visceral hypersensitivity, Lugol test, Nociception, Colposcopy.

## Short Communication

The common iodine staining of the cervix and vagina during colposcopy is the so-called Lugol' test. As chemical irritation of iodine is discomforting, we feel that this kind of nociception could be used for screening a visceral hypersensitive pelvic behavior. According to literature<sup>1</sup>, such hypersensitive pelvic behavior could lead to chronic pelvic pain.

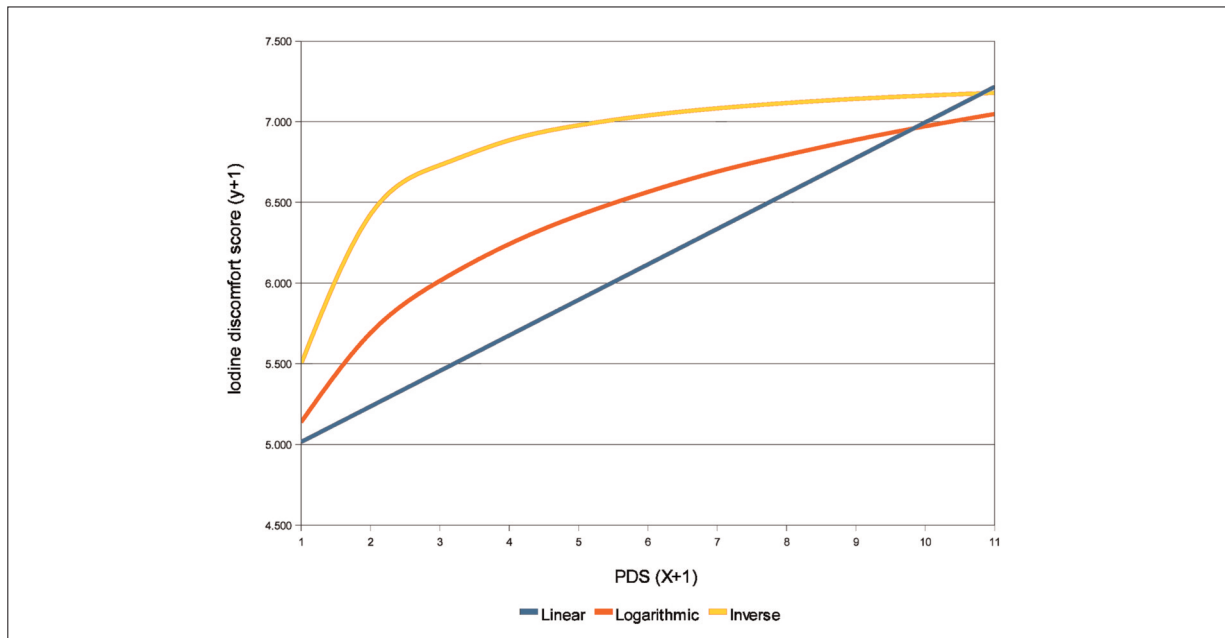
We do not know any test for diagnosing a silent hypersensitive pelvic behavior starting from the genital system in asymptomatic patients. Therefore, we build univariate regression models for assessing mean increase in discomforting perception in an unselected sample of patients undergoing colposcopy at the Ospedali Riuniti of Foggia, Italy in 2011. We were able to assess 91 patients (mean age 45.3,  $\pm 14.41$ ). Among them, 36 (39.6%) were menopausal, 44 (48.4%) had regular menses, 11 (12.1%) had a colposcopic/clinical pattern of vaginitis, 4 (4.4%) had cervical polyp, 4 (4.4%) had cervical ectropion. Before initiating colposcopy, it has been asked to the patients to graduate their pelvic discomfort (mean 2.1,  $\pm 2.76$ ) and to graduate their discomfort during menstruation (mean 2.8,  $\pm 3.08$ ; missing 40.7%), sexual intercourse (2  $\pm 2.97$ ; missing 13.2%), defecation (mean 0.8,  $\pm 2.02$ ), urination (mean 1.1,  $\pm 2.1$ ) with a numeric rating scale from 0 (meaning no discomfort) to 10 (maximum discomfort, meaning pain). After few minutes of staining with Lugol' solution (dilution 3%), patients were invited to graduate the discomfort who they were complaining (mean 4.4,  $\pm 3.02$ ).

Linear, logarithmic, inverse, cubic, quadratic, exponential regression models were built by using as independent variables: pelvic discomfort score (PDS), discomfort score during menstruation (MDS), discomfort score during sexual intercourse (SIDS), discomfort score during defecation (DDS), discomfort score during urination (DUS). To build models, the scores collected were increased by 1. The only significant models were the linear, logarithmic and inverse models for the independent variable PDS, and the linear model for the independent variable SIDS (Table I). The models poorly predict the whole variability. These findings suggest that Lugol' nocicep-

**Table I.** Summary of models.

Models	Independent variable	R <sup>2</sup>	Residual	Unstandardized coefficient	Constant	Standard error	p
Linear	PDS	0.042	784.330	0.220	4.685	0.111	0.050
Logarithmic	ln(PDS)	0.054	774.807	0.796	4.786	0.353	0.027
Inverse	1/(PDS)	0.061	769.410	-1.847	6.576	0.771	0.019
Linear	SIDS	0.051	646.322	0.228	4.414	0.113	0.049

PDS = pelvic discomfort score. SIDS = sexual intercourse discomfort score.



**Figure 1.** Graphical representation of models for PDS.

tion can predict specifically pelvic visceral hypersensitivity, irrespective from causes of pelvic visceral hypersensitivity. By using the models provided (Figure 1), researchers and clinicians can find a normal pelvic visceral sensitivity if patient reports a iodine-provoked discomfort score of 4.5 or less. More intense scores would link with causes of pelvic hypersensitivity, needing to be investigated.

#### Conflict of Interest

The Authors declare that there are no conflicts of interest.

#### References

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