

# THE ECOGRAPHIC MONITORIZATION OF THE THYROID GLAND DIMENSIONS AT THE PATIENTS WITH ACTIVE CHRONIC HEPATITIS WITH HVC AND HVB AT THE BEGGINING AND AFTER THE THERAPY WITH PEGINTERFERON $\alpha$ 2A

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**Keywords:** Interferon alfa; thyroid gland; chronic viral hepatitis HVB; chronic viral hepatitis HVC

**Abstract:** Objective: The objective of this paper was the ecographic monitorisation of the thyroid gland dimension at the patients with active chronic hepatitis with HVC and HVB during the treatment with Peginterferon  $\alpha$  2A 180 $\mu$ g. Methods: The clinical study was effectuated on a lote of 45 patients, aged between 18 – 65 years, from witch 25 patients with active chronic hepatitis with HVC and 20 patients with active chronic hepatitis with HVB. The distribution on sex comprised in the lote of active chronic hepatitis with HVC 15 female patients and 10 male patients and in the lote of those with active chronic hepatitis with HVB 11 female patients and 9 male patients. The dimension of the thyroid gland was established ecographically at the beggining and in the end of the therapy with Peginterferon  $\alpha$  2A. It has been established a medium volume of the thyroid gland for every category of the fourth categories of patients at the beggining and at the re-evaluation. The status of the patient regarding the thyroid dysfunction before the beginning of the treatment wasn't taken into consideration. The patients were selected from the clinic and the ambulatory of the Clinic and Emergency Hospital of Sibiu. In the study there weren't included the patients that at the beginning of the treatment presented thyroid dysfunction. The evaluation also excluded the patients with a thyroid pathology set up during therapy. Results: The result of the determinations was a medium significant increase with percents comprised between 11 - 20 % secondary the therapy with Interferon. Conclusion: The female patients with chronic active hepatitis with HVC presented a percentage difference between the volumes of the thyroid gland at the beggining and after treatment increased in contrast with the female patients with chronic active hepatitis with HVB. For the male patients the percentage difference between the volumes of the thyroid gland was increased in the case of patients with active chronic hepatitis with HVB in contrast with the patients with chronic active hepatitis with HVC.

**Cuvinte cheie:** Interferon alfa; glanda tiroidă; hepatită cronică virală VHB; hepatită cronică virală VHC

**Rezumat:** Obiective: Obiectivul acestei lucrări a fost de a monitoriza ecografic dimensiunea glandei tiroide la pacienții cu hepatită cronică activă cu VHC și VHB pe parcursul tratamentului cu Peginterferon  $\alpha$  2A 180  $\mu$ g. Metode: Studiul clinic a fost efectuat pe un lot de 45 pacienți, având vârste cuprinse între 18 – 65 ani, din care 25 de pacienți cu hepatită cronică activă cu VHC și 20 de pacienți cu hepatită cronică activă cu VHB. Distribuția pe sexe a cuprins în lotul celor cu hepatită cronică activă cu VHC 15 paciente de sex feminin și 10 pacienți de sex masculin iar în lotul celor cu hepatită cronică activă cu VHB 11 paciente de sex feminin și 9 pacienți de sex masculin. S-a stabilit ecografic dimensiunea glandei tiroide la inițierea și la sfârșitul terapiei cu Peginterferon  $\alpha$  2A. S-a stabilit un volum mediu al glandei tiroide pentru fiecare din cele patru categorii de pacienți, atât la inițiere cât și la reevaluare. Nu s-a ținut cont de statusul pacientului anterior inițierii tratamentului din punct de vedere al disfuncționalității tiroidiene. Pacienții au fost selectați din clinica și ambulatorul spitalului clinic de urgență Sibiu. Nu au fost incluși în studiu pacienții care la inițierea tratamentului prezentau disfuncție tiroidiană. Au fost de asemenea excluși din evaluare pacienții cu patologie tiroidiană instalată în cursul terapiei. Rezultate: Rezultatul determinărilor a fost o creștere medie semnificativă, cu procente cuprinse între 11 - 20 % secundar terapiei cu Interferon. Concluzii: Pacienții de sex feminin cu hepatită cronică activă cu VHC au prezentat o diferență procentuală între volumele glandei tiroide la inițiere și post tratament mai crescută față de pacienții de sex feminin cu hepatită cronică activă cu VHB. Pentru sexul masculin, diferența procentuală între volumele glandei tiroide a fost mai crescută în cazul pacienților cu hepatită cronică activă cu VHB față de cei cu hepatită cronică activă cu VHC.

## THE AIM OF THE STUDY

The objective of this paper was the ecographic monitorisation of the thyroid gland dimension at the patients with active chronic hepatitis with HVC and HVB during the treatment with Peginterferon  $\alpha$  2A 180 $\mu$ g.

## MATERIAL AND METHOD

The clinical study was effectuated on a lote of 45 patients, aged between 18 – 65 years, from witch 25 patients with active chronic hepatitis with HVC and 20 patients with active chronic hepatitis with HVB. The distribution on sex comprised

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## CLINICAL ASPECTS

in the lot of active chronic hepatitis with HVC 15 female patients and 10 male patients and in the lot of those with active chronic hepatitis with HVB 11 female patients and 9 male patients.

The dimension of the thyroid gland was established ecographically at the beginning and in the end of the therapy with Peginterferon  $\alpha$  2A. It has been established a medium volume of the thyroid gland for every category of the fourth categories of patients at the beginning and at the re-evaluation.

The status of the patient regarding the thyroid dysfunction before the beginning of the treatment wasn't taken into consideration.

The patients were selected from the clinic and the ambulatory of the Clinic and Emergency Hospital of Sibiu. In the study there weren't included the patients that at the beginning of the treatment presented thyroid dysfunction. The evaluation also excluded the patients with a thyroid pathology set up during therapy.

### RESULTS AND DISCUSSION

The result of the determinations was a medium significant increase with percents comprised between 11 - 20 % secondary the therapy with Interferon.

The volume modifications were as it follows in the case of the active chronic hepatitis with HCV, the percentage difference between the volumes was of 20% in the case of the 15 female patients, the medium volume of the thyroid gland being of 7,5 cm<sup>3</sup> at the beginning and of 9 cm<sup>3</sup> after treatment. For the male, the percentage difference between volumes was of 11%, 10 male patients having a medium volume of the thyroid gland of 10,5 cm<sup>3</sup> at the beginning of the treatment and of 11,6 cm<sup>3</sup> after treatment.

In the case of the chronic active hepatitis with HBV, the percentage difference between the volumes was of 18% in the case of the 11 females patients, the medium volume of the thyroid gland being of 7,7 cm<sup>3</sup> at the beginning and of 9,08 cm<sup>3</sup> after treatment. For the males, the percentage difference between volumes was of 14,5%, and the 9 male patients having a medium volume of the thyroid gland of 10,3 cm<sup>3</sup> at the beginning of the treatment and of 11,08 cm<sup>3</sup> after treatment.

The result of the analysis was a medium meaningful increase with percentages included between 11 - 20 % secondary the Interferon therapy.

Our study revealed the correlation between the thyroid gland volume and the duration of the treatment with Peginterferon  $\alpha$  2A. We have noticed a meaningful increase of the volume of the thyroid gland during the treatment. This modification is determined most probably to the irregularity of the synthesis or of the releasing way of the thyroid hormones. A pursue on long term of these patients makes obvious the apparition of the thyroid nodules. The physical examination is less sensitive in comparison with the volume of the thyroid gland suggested by the ultrasound.

The thyroid echogenicity of the patients decreased significantly after treatment, so we may conclude that the Peginterferon  $\alpha$  2A determines not only functional turmoil but also the apparition of the thyroid hypoechogenicity, suggesting relevant modifications of the morphology of the thyroid gland. With the help of the Doppler ecography, it was possible the differentiation between the destructive thyroiditis and the Graves disease. It was observed a reduction of the echogenicity, suggestive for a destructive process of the thyroid gland, even before the modifications of the thyroid function given by the level of the antithyroid antibodies. The risk factors for the developing of the thyroid dysfunction were the age, the feminine sex, the increased volume of the thyroid gland before

the initiation of the treatment.

The ecography represents a complementary simple tool for the screening and pursuing during the period of the antiviral treatment, useful in the differentiation between the common types of hyperthyroidism, offering an image on the morphological modifications of the thyroid gland during the antiviral treatment.

### CONCLUSIONS

The female patients with chronic active hepatitis with HVC presented a percentage difference between the volumes of the thyroid gland at the beginning and after treatment increased in contrast with the female patients with chronic active hepatitis with HVB.

For the male patients the percentage difference between the volumes of the thyroid gland was increased in the case of patients with active chronic hepatitis with HVB in contrast with the patients with chronic active hepatitis with HVC.

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