

Heart rate variability and efficacy of the enalapril maleat therapy of chronic heart failure patients

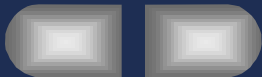
Olena V. Ignatkina, Mykola I. Yabluchansky
Kharkov Karazin National University



**Enalapril maleat (EM) - ACE inhibitor,
one of the drugs of the first line therapy for the
patients with a chronic heart failure (HF)**

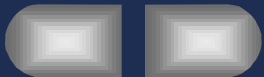
**The proved
effects of EM
at HF:**

- Increase the quality of life
- Increase the life-span
- Decrease the frequency of hospitalization
- Decrease the frequency HF progression
- Decrease the blood pressure



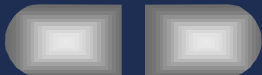
Heart rate variability (HRV)

- **Non-invasive tool for assessment of the state of neurohumoral regulation**
- **Independent predictor of the sudden death and bed outcomes**



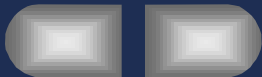
Object of the study

- 47 patients HF II-III FC on NYHA
- HF was caused by a combination moderate to severe arterial hypertension and angina pectoris FC II on Canadian classification
- Mean age 64,2±6,8 years
- Male -16, female - 31



Stages of the study

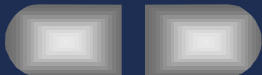
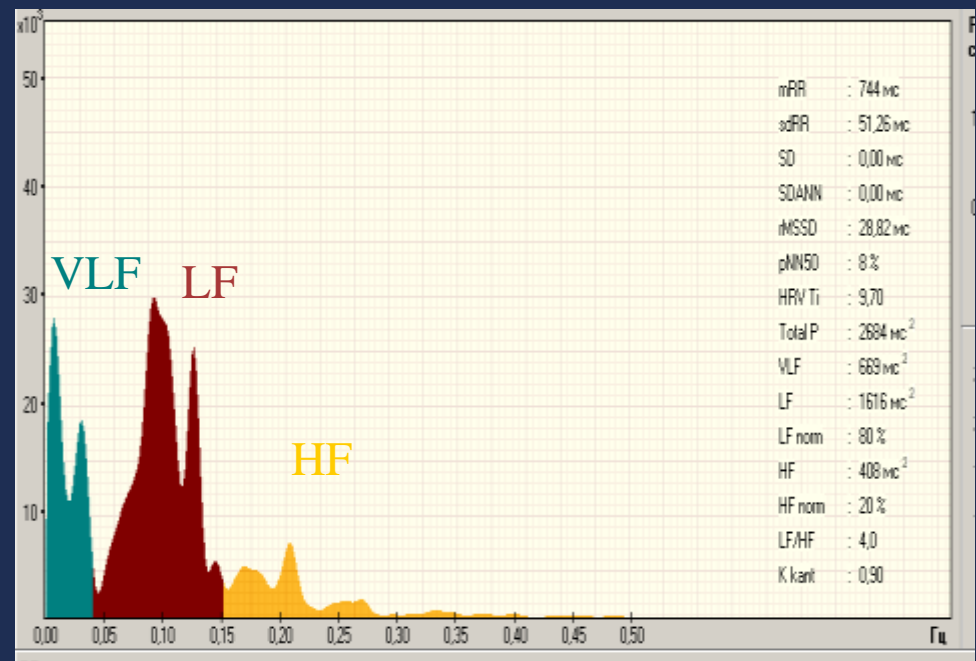
Assessing of neurohumoral regulation
with HRV method \Rightarrow acute farm
test: 10-20 mg of enalapril maleat
 \Rightarrow assessing neurohumoral regulation
after 180 minutes \Rightarrow 1 month of
the treatment with enalapril maleat
(15 - 25 mg/day) \Rightarrow assessing of
neurohumoral regulation and clinical
effects



Heart rate variability method

Spectral characteristics
as neurohumoral regulation
indexes:

1. TP (msek^2) – common neurohumoral regulation
2. VLF (msek^2) – mostly humoral activity
3. LF (msek^2) - mostly sympathetic activity
4. HF (msek^2) – mostly parasympathetic activity



Stratification of patients

Acute farm test
with EM

Two groups:

Group 1:

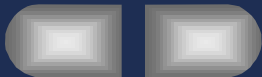
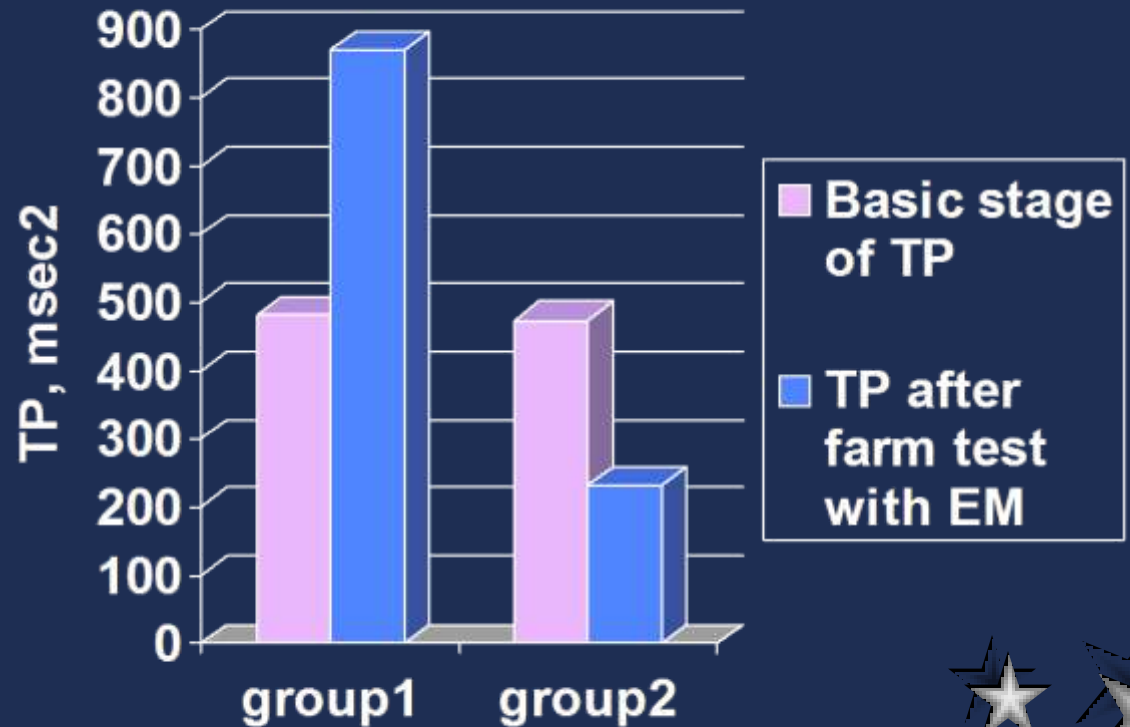
Increase of TP

24 patients

Group 2:

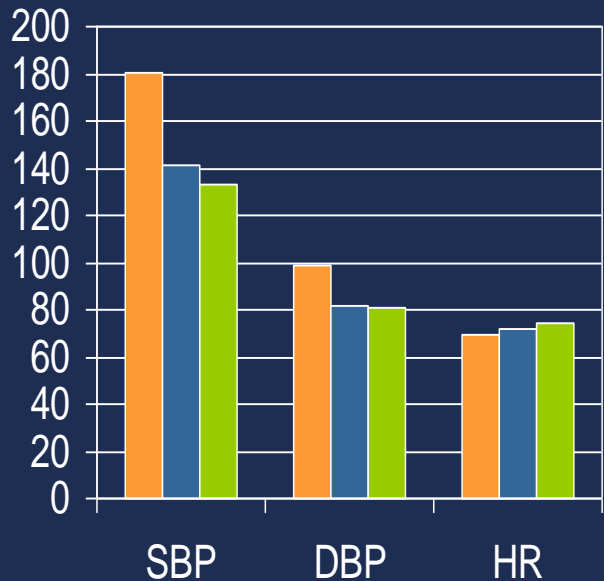
Decrease of TP

23 patients



Results of treatment: blood pressure and heart rate

Group 1

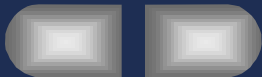
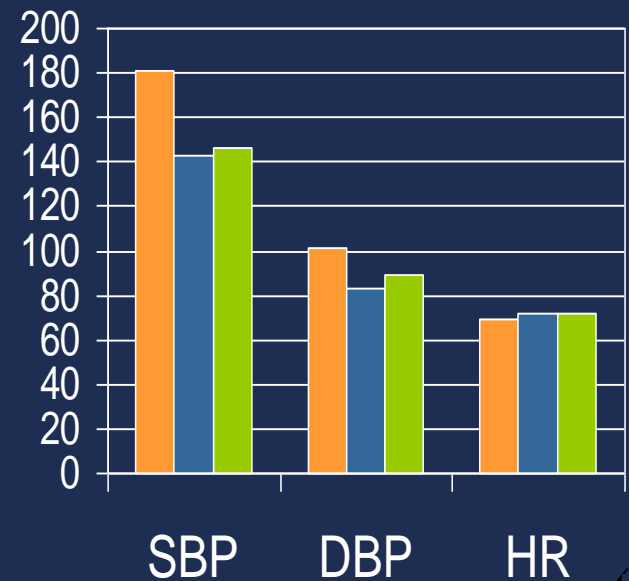


Basic stage

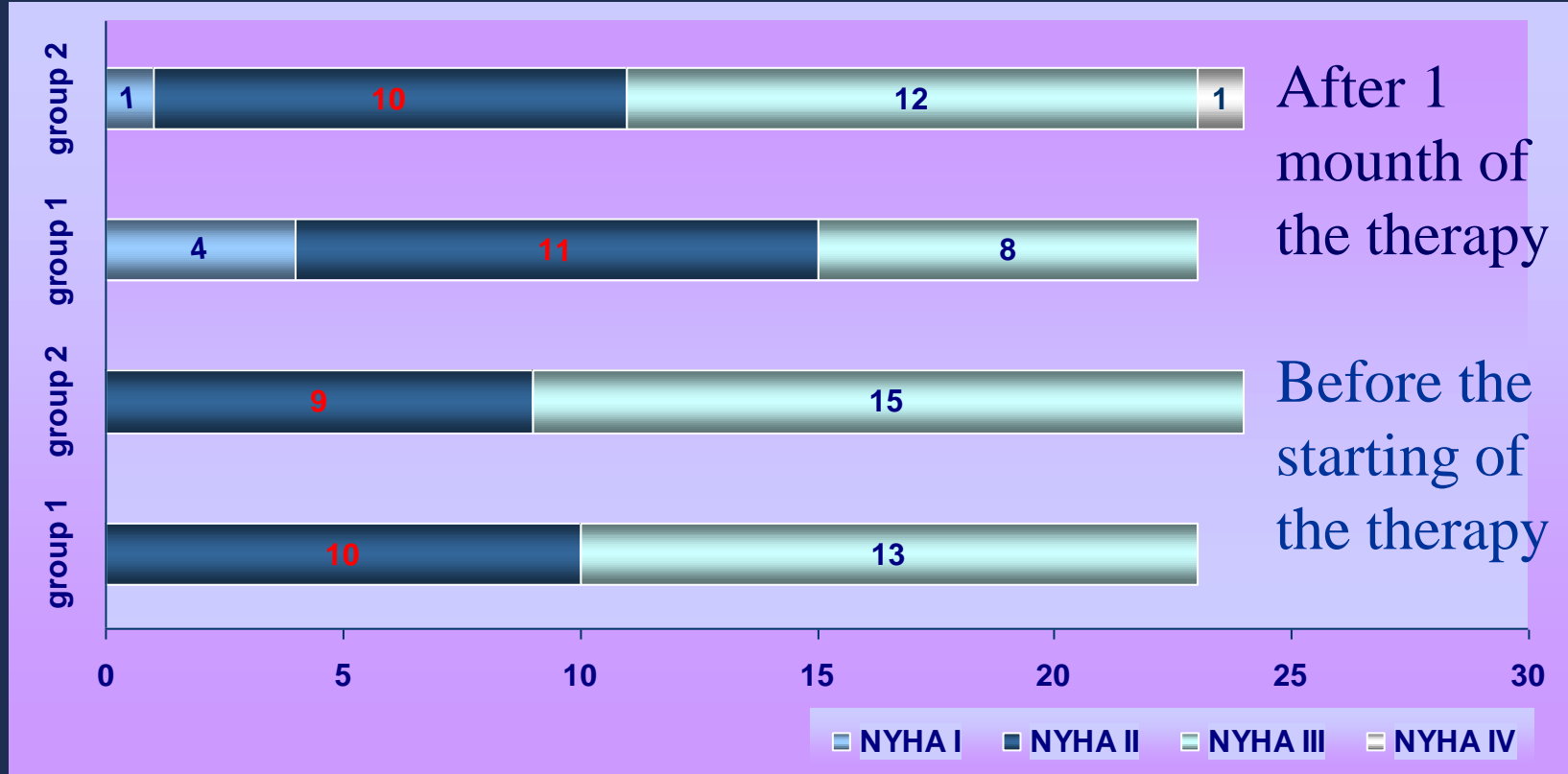
After farm test

After 1 month of therapy

Group 2

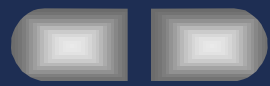


Dynamic of heart failure clinic appearance in the groups



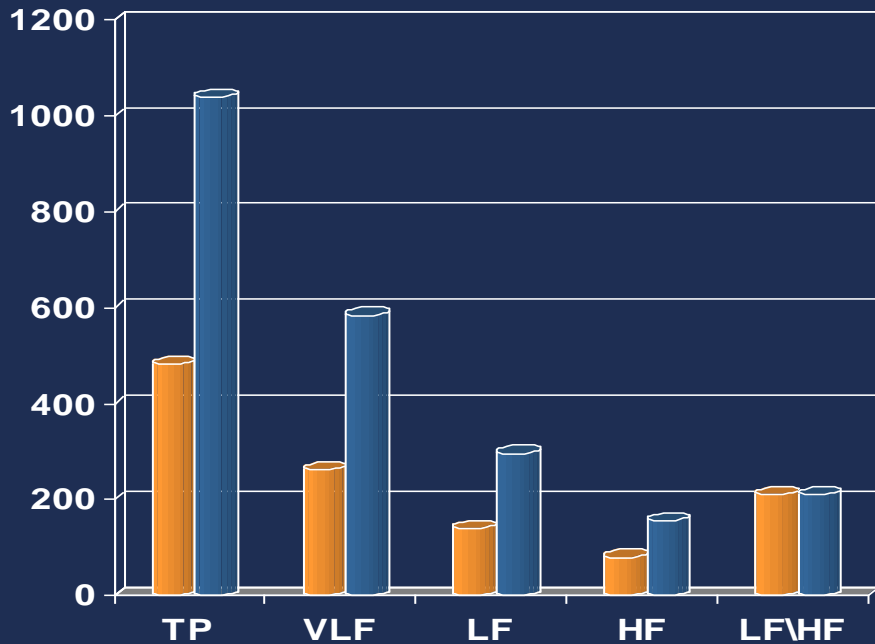
After 1 month of the therapy

Before the starting of the therapy

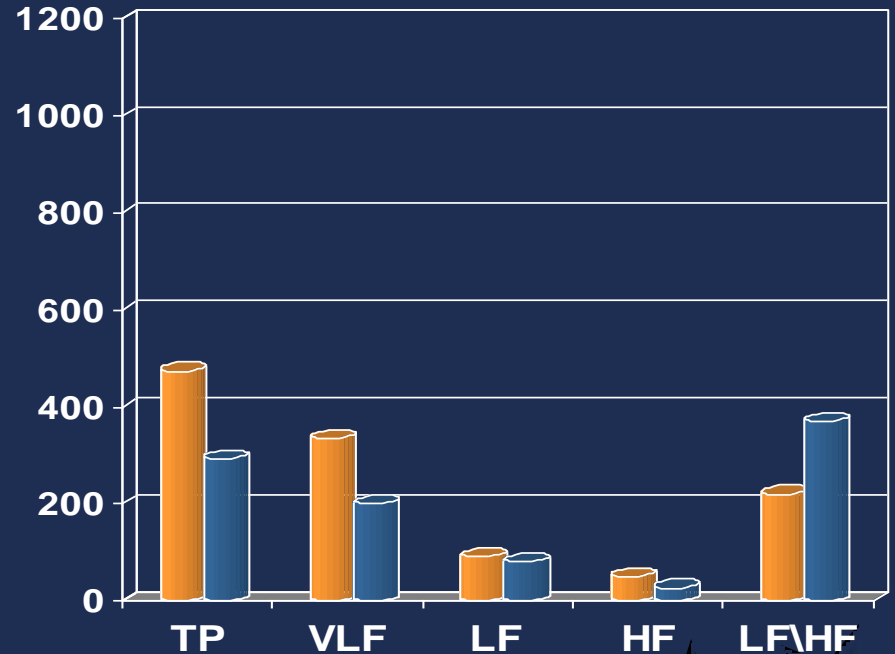


HRV changes in 1 month therapy with EM

Group 1

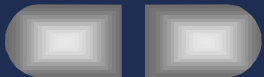


Group 2



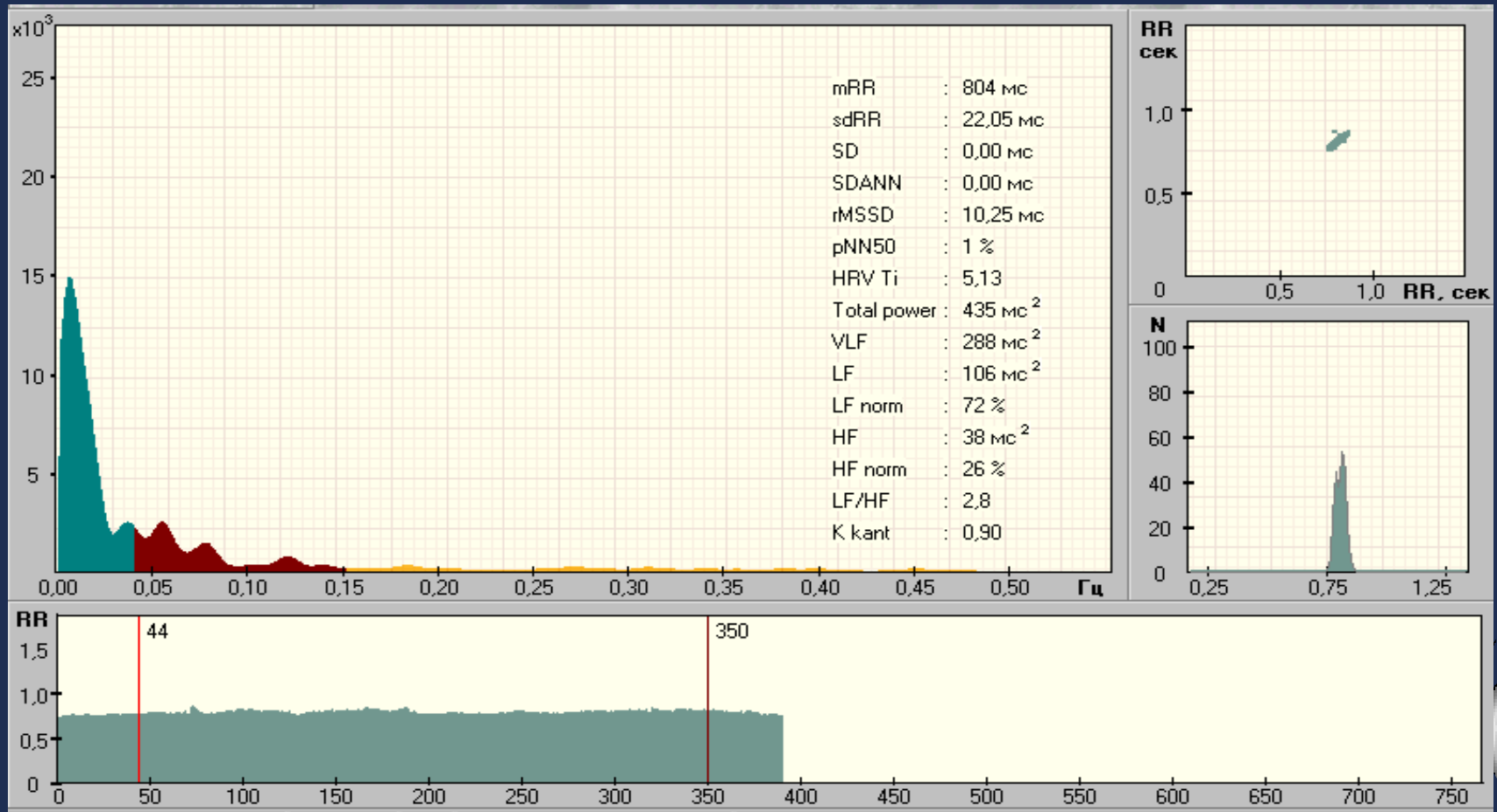
Basic stage

After therapy

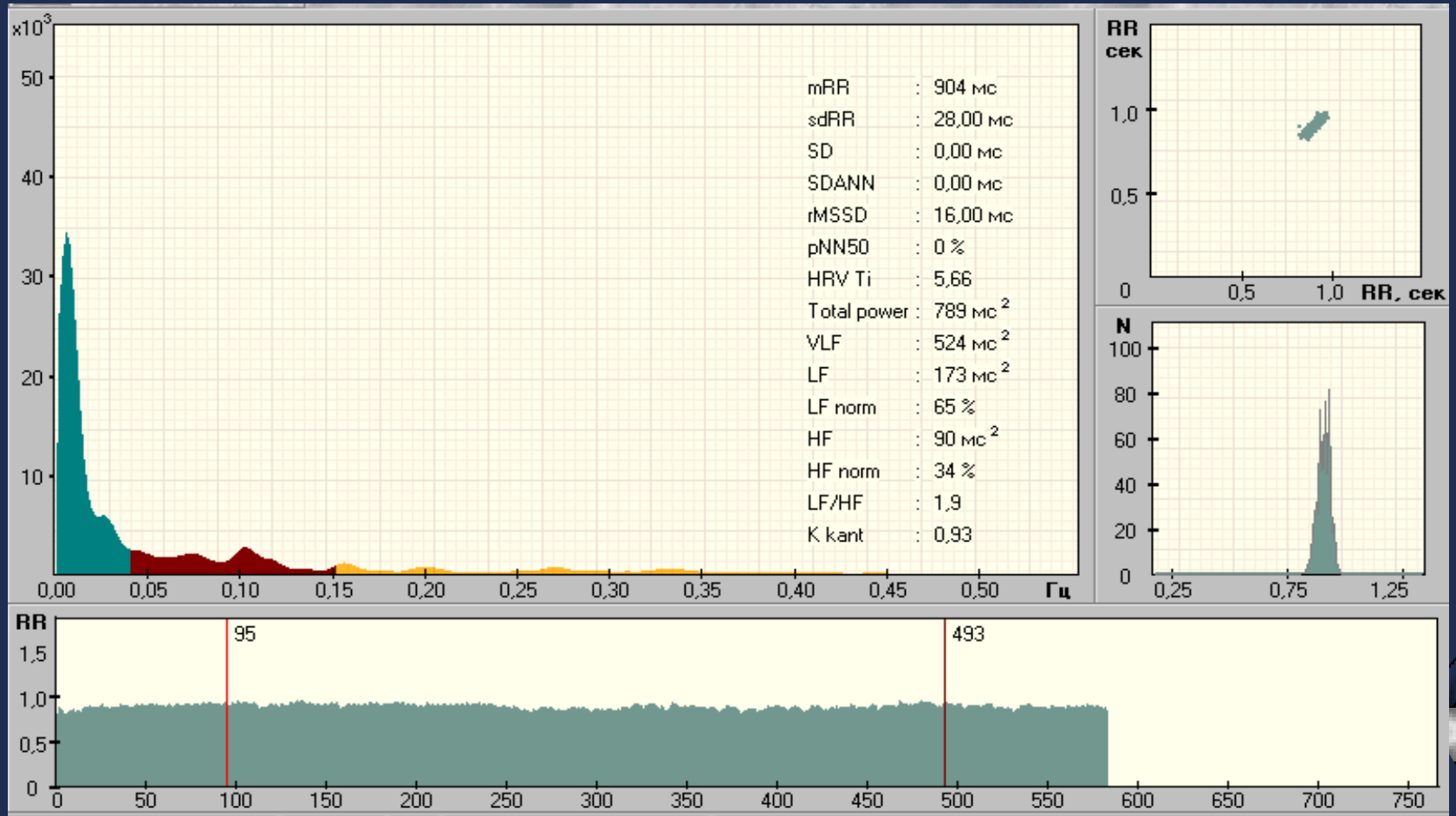


Patient T., female, (group 1), 66 y.o.

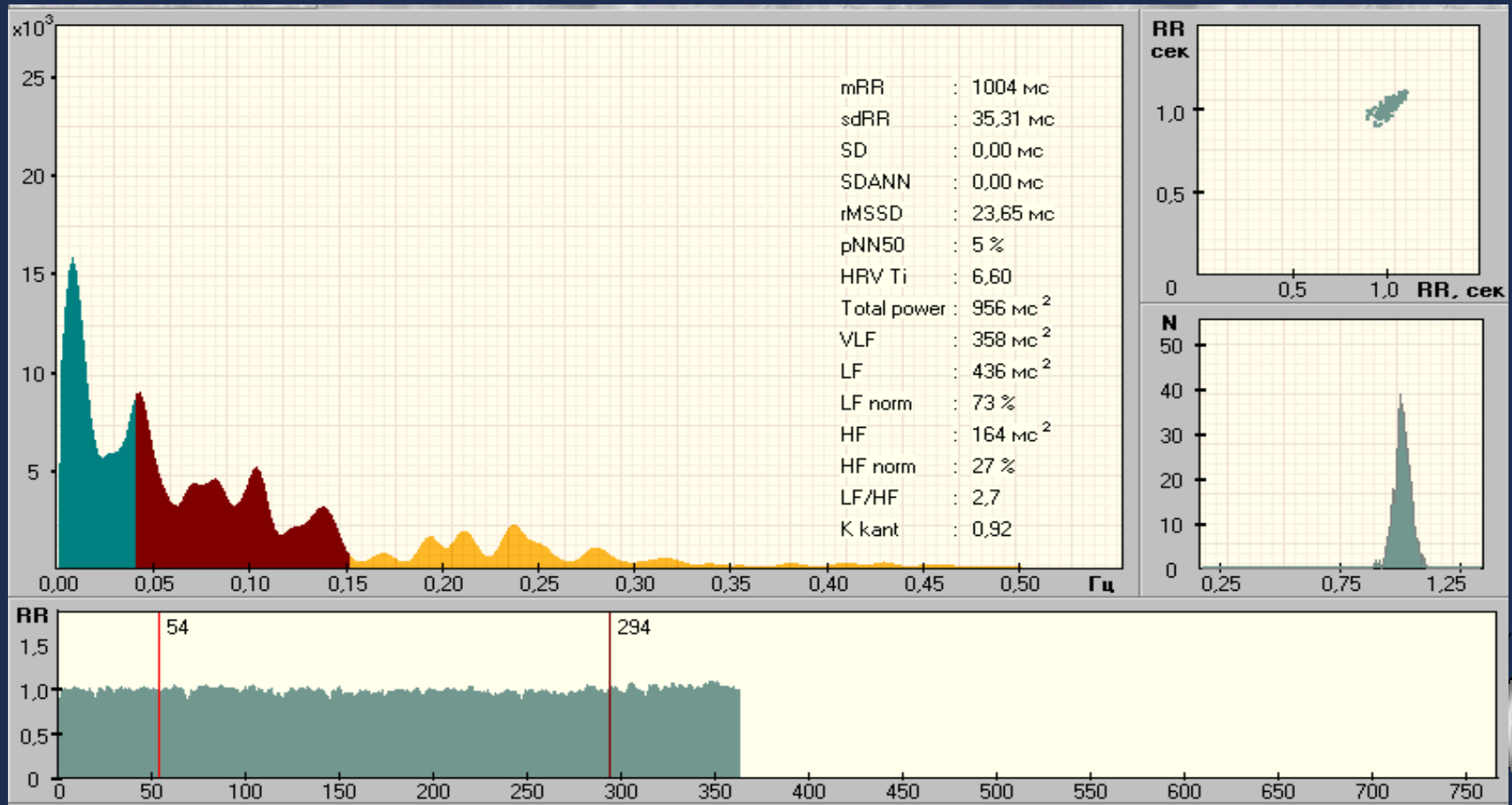
Basic stage of HRV



Patient T., female, (group 1), 66 y.o. HRV after acute farm test with EM



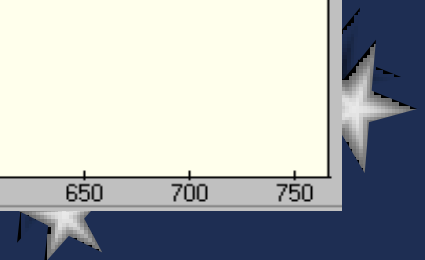
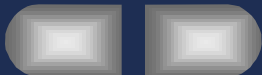
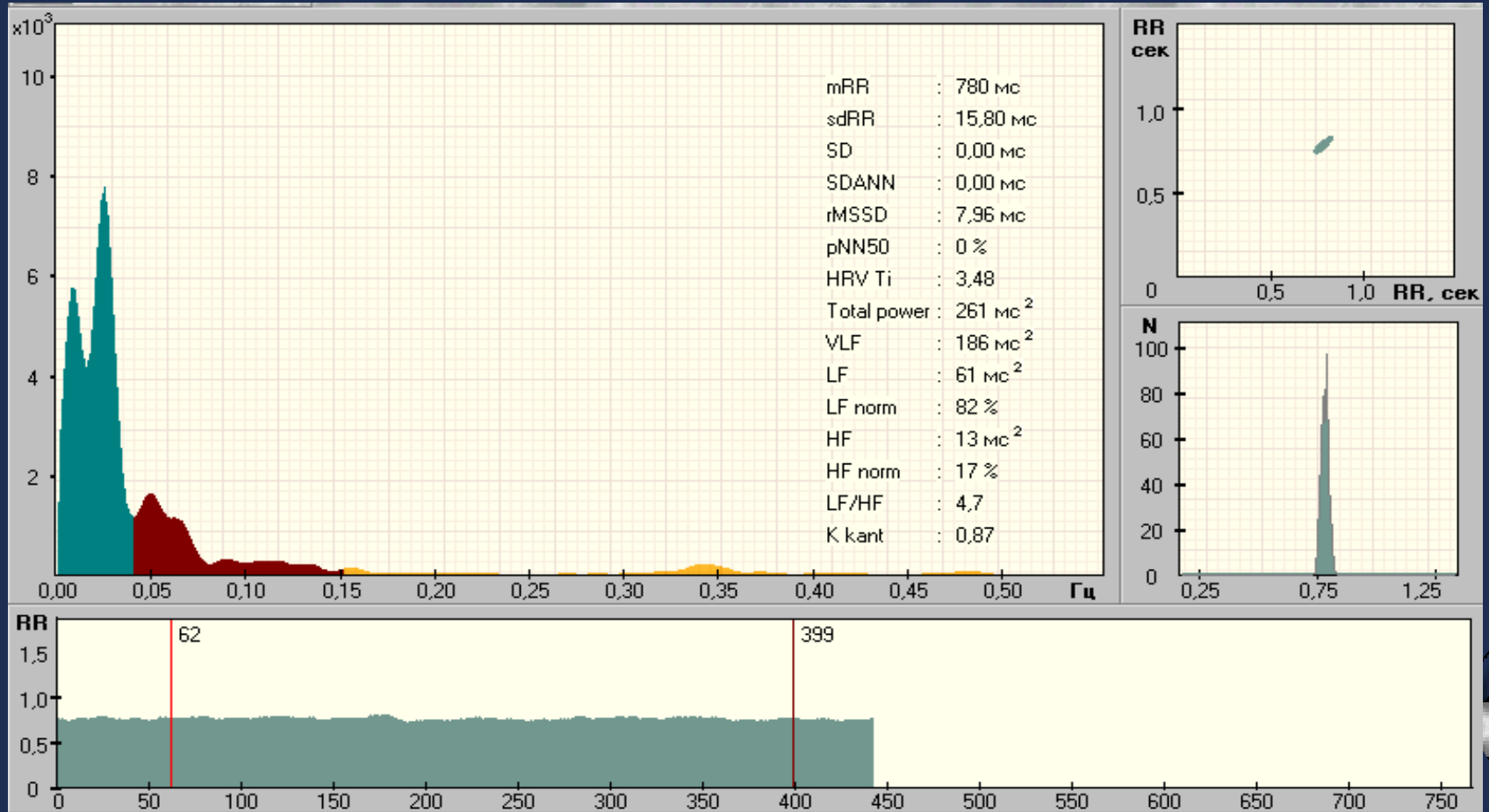
Patient T., female, (group 1), 66 y.o. HRV after 1 month of EM therapy



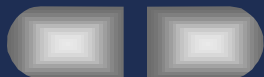
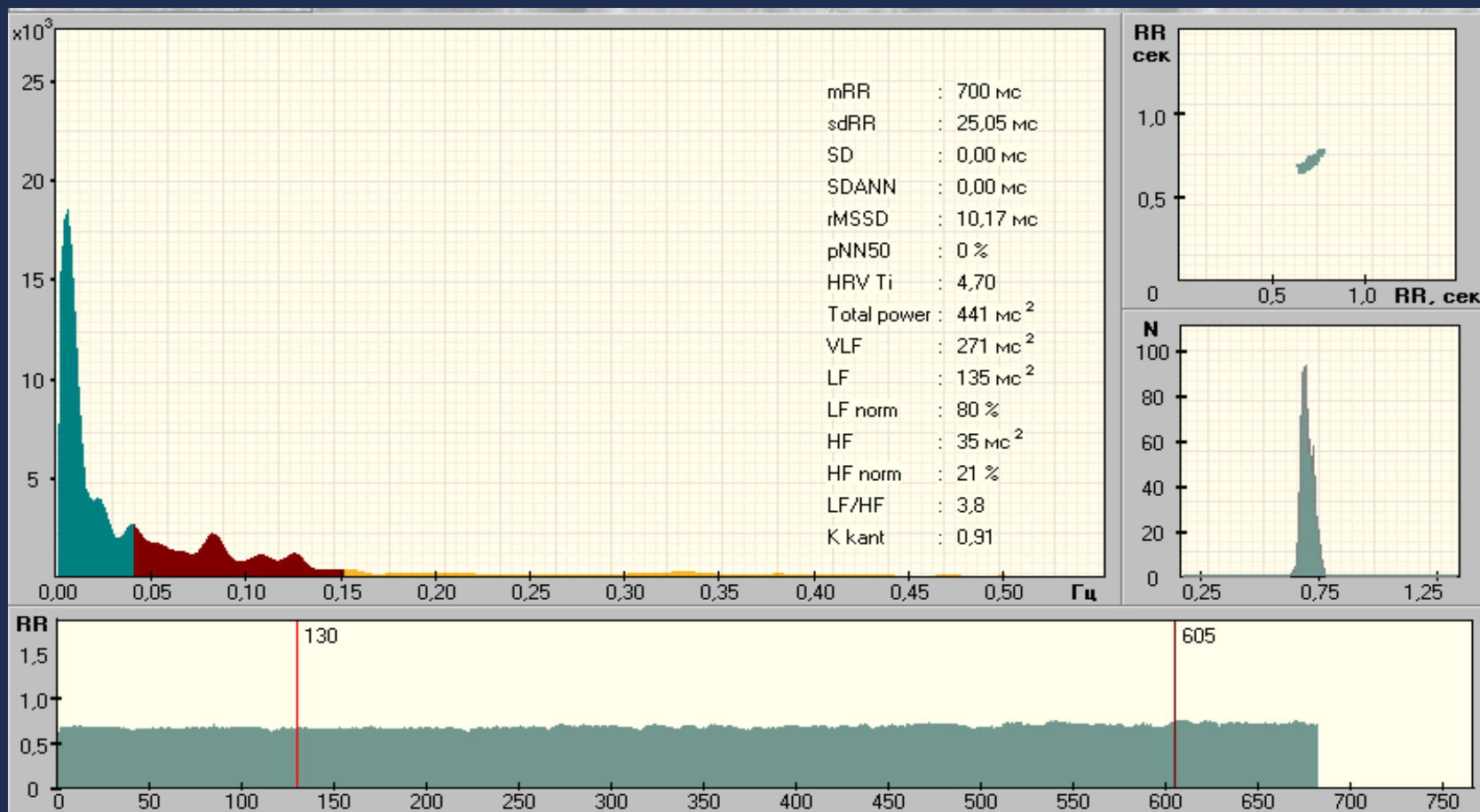
Patient M., female, (group 2), 64 y.o. Basic stage of HRV



Patient M., female, (group 2), 64 y.o. HRV after acute farm test with EM



Patient M., female, (group 2), 64 y.o. HRV after 1 month of EM therapy



Conclusion:

The results have shown, that the efficiency of HF therapy by the EM is appreciably determined by initial reaction TP HRV on a preparation in acute pharmacological trial.

In the group of the patients with increase of TP in acute farm test with EM the therapy within one month results in rising capacity NGR.

At the patients with decrease of TP in acute farm test with EM capacity after 1 month of therapy falls with intensifying of sympathetic influences.

The research shows necessity of the individual approach to treatment HF.

