INTRODUCTION
Topical minoxidil solution is the drug with highest level of medical evidence for treatment of female androgenetic alopecia. The limited success rate of evidence based monotherapy points to a more important complexity of female alopecia. One must remain open-minded for a multitude of cause-relationships underlying female hair loss, and therefore the possibility of combination regimens for treatment that may act synergistically to enhance hair growth and quality.

STUDY OBJECTIVES
To assess efficacy and tolerability of combination therapy of Panto(vi)gar® and 2% minoxidil solution and its advantages in comparison with using 2% minoxidil monotherapy in female patients complaining of hair loss.

ACTIVE SUBSTANCE (Panto(vi)gar®)
Medicinal yeast 100 mg, thiamine mononitrate 60 mg, calcium pantothenate 60 mg, cyistine 20 mg, para-aminobenzoic acid 20 mg, keratin 20 mg

STUDY DESIGN AND METHODOLOGY
Multicenter, open-label, randomized, comparative trial. Baseline examination: medical history taking, physical examination, phototrichogram, and laboratory testing. If patient confirmed inclusion criteria and to none of exclusion criteria, she was enrolled and randomized into one of two groups: (i) Panto(vi)gar® with 2% minoxidil solution or (ii) 2% minoxidil solution. 4 visits during 9 months study period: 0 – screening visit, 1 – randomization and assigning of treatment, 2 (4months) – efficacy and tolerability evaluation, 3 (6 months) – completion of treatment, 4 (9 months) – control visit after 3 months completion of therapy.

Number of patients: 60 patients planned; 61 patients were taken into analysis (FAS).

EXCLUSION CRITERIA
• Women 18-45 years complaining of hair loss for whom in the opinion of the attending physician – combina-
tion therapy with Panto(vi)gar® and 2% minoxidil solution or 2% minoxidil monotherapy is appropriate.
• Women with hair loss lasting more than 3 months and/or reduced hair density.
• Female hair loss, including androgenetic alopecia Ludwig types I & II.
• More than 15% frontoparietal telogen rate and/or > 20% frontoparietal vellus hairs as shown in phototrichogram (TrichoScience®).
• Signed informed consent.

EFFICACY RESULTS
When assessing additional efficacy endpoints, the advantages of therapy with Panto(vi)gar® + 2% minoxidil solution (group I) were shown by statistically significant positive changes in % of patients with Ludwig I or II stages androgenetic alopecia 4 months of treatment (Figure 3). This parameter decreased to 66.7% in group I (p=0.021) and to 83.9% in group II (p=0.054). No statistically significant differences between groups were shown, however.

Figure 3: Global photographic assessments

CONCLUSIONS
The conducted study showed Panto(vi)gar® to be effective and safe in combination with 2% minoxidil solution for treatment of female alopecia. Statistically significant benefits were found with the combination of oral Panto(vi)gar® and 2% topical minoxidil solution as compared with topical minoxidil monotherapy. These results enable to recommend the use of Panto(vi)gar® in combination with topical minoxidil for treatment of female androgenetic alopecia.

REFERENCES