Background: AVT02 is an investigational biosimilar to adalimumab. It is approved in Europe, Canada, and the UK. It is not approved by the US Food and Drug Administration (FDA).

Methods: To evaluate the pharmacokinetic similarity of 100 mg/mL AVT02, an investigational biosimilar of adalimumab, when administered either via a pre-filled syringe, or with a newly developed autoinjector in healthy adult subjects.

Results: The study was designed as a Phase 1, randomized, open-label, parallel-group study in which 207 healthy adult subjects were randomized in a 1:1 ratio to receive 100 mg/mL AVT02 either via a pre-filled syringe, or with an autoinjector, stratified by body weight. Subjects received a single subcutaneous 40 mg dose on Day 1. Pharmacokinetics, immunogenicity, local injection site reactions, and adverse events were assessed prior to, and up to 64 days after, study drug administration.

Conclusion: The results observed supported the assessment of pharmacokinetic similarity of investigational AVT02 administered by pre-filled syringe or with an autoinjector. The 90% CIs for the ratios of geometric least square means for the primary pharmacokinetic parameters Cmax, AUC0-t, and AUC0-∞ were contained within prespecified margins 80% and 125%, based on an analysis of variance model with treatment as a fixed effect. The mean serum concentration-time profile of adalimumab by treatment group is shown in Figure 1.

Figure 1. Mean Serum Concentration-Time Profile of Adalimumab by Treatment Group on Semilogarithmic Scale (Pharmacokinetic Population)

Binding anti-drug antibodies were detectable at the end of study visit on Day 64 in 100% and 97.0% of subjects in the pre-filled syringe administration and the autoinjector groups, respectively. Of those subjects positive for anti-drug antibodies, 85.7% and 86.5% further tested positive for neutralizing antibodies in the pre-filled syringe administration and autoinjector groups, respectively. The frequency of local administration site reactions was 11.8% overall and similar between treatment groups. The most frequently reported treatment-emergent adverse events in both treatment groups were under the SOC: Infections and infestations (56.0% in the AVT02-pre-filled syringe group and 45.2% in the AVT02-autoinjector group). The safety profiles were generally similar between treatment groups.

Conclusion: The results observed supported the assessment of pharmacokinetic similarity between the pre-filled syringe and autoinjector delivery systems after a single subcutaneous 40 mg dose. The autoinjector delivery system was generally well tolerated in healthy subjects, with a safety and immunogenicity profile similar to that observed with 100 mg/mL AVT02 administered using a pre-filled syringe. ClinicalTrials.gov Identifier: NCT03983876


Work and rehabilitation

INFLUENCE OF COMPLEX KINESIOThERAPY ON METABOLISM IN CASES OF SARCOPENIC OBESITY

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Background: exercise is one of the main factors for the successful treatment of obesity. It is known that with increasing age, muscle strength (sarcopenic obesity) decreases in an obese patient, which can lead to early disability. Regular exercise therapy increases the functional capacity of the metabolism, prevention of obesity among the population, as well as treatment for persons with sarcopenia and obesity. Therefore, it is relevant to study in metabolism obese patients while using kinesiotherapy.

Objectives: aim of the study was to estimate the effect of complex 3-week treatment with 4 kinesiotherapy methods on body weight loss and carbohydrate metabolism in patients with obesity.

Methods: 80 people were enrolled in the study. 40 people in the first group (G1) -26-69 years old with alimentary obesity (mean age 53.7 ± 11 years, weight 106.8 ± 25 kg, BMI 38.3 ± 7.4 kg/m2, waist circumference WC 110.6 ± 16 cm, hip circumference HC 121 ± 15.3 cm. 40 people in the second group (G2) 21-68 years old with alimentary obesity (mean age 51.3 ± 11 years, weight 112.7 ± 25 kg, BMI 41.8 ± 8.2 kg/m2, WC 113.6 ± 16 cm, HC 126.3 ± 15.1 cm. Complex kinesiotherapy administered daily for 3 weeks and included interactive sensorimotor training on double platform, a special complex of physical exercises in the gym and ergocycles. In addition, in 2 gr. patients additionally included kinesiohydrotherapy in a pool. Weight, HC, carbohydrate tolerance test (TT HC), insulin last 3 weeks was measured at baseline and after the treatment was completed. Evaluation of the results were performed at baseline and in 3 weeks.

Results: there was a significant improve in body weight in two groups (110 ± 24 kg at baseline vs 107 ± 22.5 kg in 3 weeks; p = 0.000), BMI (40 ± 8 vs 39 ± 7.6 kg/m2; p = 0.000), WC (112 ± 15.9 vs 108.1 ± 15 cm; p = 0.000), HC (124.3 ± 15.4 vs 119 ± 14 cm; p = 0.000) in treated obese patients. After 3 weeks, we registered statistically significant elevation in insulin levels of G2 vs to G1. With Z = 2.63 in G1, p = 0.003 and Z = 1.96, p = 0.002 in G2, and Z = 2.87 when assessing the significance elevation between G1 and G2, p = 0.003. Significantly improved performance of TT HC in 1g, Z = 2.02, p = 0.04, in 2g, Z = 3.004, p = 0.002. When assessing the significance of differences between G1 and G2 after treatment, Z = 2.3, p = 0.017.

Conclusion: Complex treatment with 4 methods of kinesiotherapy helps to reduce body weight, reduce WC, HC, insulin, TT HC in obesity. However, patients who additionally received kinesiohydrotherapy in a pool showed more significant improvements in metabolism.

REFERENCES:


Disclosure of Interests: None declared