

# Investigation of the distribution of particles of drugs with the help of cascade impactor

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**Conflict of interest:** none

**BACKGROUND.** Successful nebulization is a result of joint usage of nebulizer and medication, which equally define availability and disposition of the active substance. Amount of the substance delivered by different nebulizer systems may differ in more than 10 times.

**OBJECTIVE.** The aim of the study was to investigate the distribution of aerosol particles of drugs for inhalation manufactured by «Yuria-Pharm» under conditions of usage of Ulaizer Home.

**MATERIALS AND METHODS.** We investigated Ulaizer Home nebulizer and medications for inhalation (Decasan, Lorde hyal, Nebufluson, Nebutamol) with the help of new generation impactor (“Copley Scientific Limited”, Great Britain).

**RESULTS AND DISCUSSION.** Mass median aerodynamic diameter (MMAD) of Decasan particles was 4.878  $\mu\text{m}$ , geometric standard deviation (GSD) – 1.72. MMAD of Lorde hyal particles was 3.194  $\mu\text{m}$ , GSD – 1.556. Drop distribution for Nebutamol was alike the distribution for non-viscous aqueous solutions (MMAD – 5.363  $\mu\text{m}$ , GSD – 1.924). For Nebufluson MMAD was 5.491  $\mu\text{m}$ , GSD – 1.724.

**CONCLUSIONS.** The delivery of the inhaled drug to the required area of the respiratory system is a key to successful nebulization. It directly depends on the parameters of the aerosol. The distribution of particles of drugs manufactured by «Yuria-Pharm» in case of nebulization using Ulaizer Home allows to deliver the required amount of drug to the predefined parts of the respiratory system.

**KEY WORDS:** nebulizer, mass median aerodynamic diameter, cascade impactor.