



STUDY OF THE INFLUENCE OF GRANULATION ON THE QUALITY INDICATORS OF THE «NIFIKOR» TABLETS

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Importance. Chronic heart failure (CHF) is one of the most unfavorable pathological conditions that significantly reduces the duration and quality of life for patients. According to the WHO, the 5-year survival rate for patients with CHF does not exceed 30-50%. In the group of patients who have suffered a myocardial infarction, up to 50% of patients die within the first year after developing coronary artery disease. Therefore, the most important task in optimizing therapy for CHF is to find drugs that increase the life expectancy of patients with CHF. Beta-adrenoblockers are recognized as one of the most promising classes of drugs that are effective both for the prevention of heart failure and for its treatment. The hypotensive effect of bisoprolol may be enhanced when nifedipine or dihydropyridine calcium channel blockers are used simultaneously. Based on the above, we have identified the purpose and objectives to which experimental research is devoted.

Purpose: To choose a method and select a granulation mode, to study the effect of fractional composition, relative humidity and pressing pressure on the quality indicators of tablets of the drug «Nifikor».

Materials and methods. Technological properties of materials and quality indicators of granules were determined according to generally accepted methods. The study was studied in the methods presented in State Pharmacopoeia of the Republic of Uzbekistan, ND and literature.

In wet granulation method, the type, amount, concentration of humidifiers plays a very important role in obtaining wet. Wetting flight we used purified water, sugar juice, a solution of ethyl alcohol of different concentrations – 30, 40, 50, 70% and 2-10% potato starch. The results of the research conducted showed that 3 % starch solution was intended to be used as a humidifier, that is, the obtained tablets fully meet the requirements laid down in theetets listed in State Pharmacopoeia of the Republic of Uzbekistan. The wet absorption kinetics of the drug in the selection of fillers and previous studies were based.

Results. Experimental data on the study of the influence of technological factors on the quality indicators of the tablets of the drug «Nifikor» of the selected composition, which was determined using mathematical planning of the experiment by the 4×4 Latin square method, are presented. The obtained values of the results were used to test the technology of tablets in production conditions. From the results of the study of the quality indicators of wet granulated sheets, the following were observed: №1, №4, the hardness of the sheets obtained by composition according to the requirements of State Pharmacopoeia of the Republic of Uzbekistan, non-compliance with the requirements for fragmentation, and the sheets obtained by composition №2 and №5 were determined only by the indicators of fragmentation and Proceeding from the above, further studies were conducted according to the composition №3. Obtained with the content of №3 tablets fracture hardness 66 N, decay 11 min. and the hardness to the friction was determined to be 99,02%. Used 3% starch solution as a moisturizing agent. The next research was devoted to the study of technological indicators of the mass of «Nifikor» tablets, prepared under the conditions of the enterprise on the basis of the selected



composition. As a result of the studies, it was observed that some of the auxiliary substances used, namely scattering, improved the indicators of scattering density. Also, the obtained indicators showed that after the granulation of the substrate, the scattering increased in size, and the scattering density increased twice. During the granulation, the size of the granules was increased, the results obtained showed that they were mainly in fractions of $-1000+500\ \mu\text{m}$. From the following technological indicators, it was observed that the scattering density was $602\ \text{kg/m}^3$, scattering was $5,9 \cdot 10^{-3}\ \text{kg/s}$, the angle of natural fall was 41 degrees, the coefficient of pressability was 1,21, the coefficient of density was 3,2, and it was seen that they had a relatively positive property with respect to the substrate. It turned out that the residual humidity is certain to be 2,0 - 3,5%. And the results obtained, in turn, indicate that the auxiliary substances and the technological process are correctly selected.

Conclusions. The method and mode of granulation are selected. It was established that the fractional composition should contain a dust-like fraction (0.18 mm or less) of no more than 20%, the residual moisture content of the granulate mixture for tableting should be no more than 1-2 % and the tablet pressing pressure should be in the range from 150 to 180 MPa.