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STUDY OF THE FUNCTIONAL STATE OF THE CARDIOVASCULAR SYSTEM IN WORKERS OF THE PHARMACEUTICAL ENTERPRISE

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Abstract. The article provides information on the pulse frequency of the cardiovascular system, arterial pressure, pulse pressure, pulse volume of the heart, minute volume of the heart and average diastolic pressure adaptation in workers of the main professional group in the pharmaceutical enterprise's production of injectable drugs.

Keywords : pharmaceutical enterprise, injection drugs, cold period of the year, warm period of the year, sterile solutions, background value.

Relevance of the problem. Scientific and technical progress and socio-economic changes in the world have led to a radical change in the working conditions of workers in most areas of production, including the pharmaceutical industry [1,2,4,7]. The development of the medical sector in our country is carried out certain measures aimed at adapting the medical system to the requirements of World templates, including the elimination of diseases caused by the derailment of working conditions at enterprises [3,8]. In this regard, in raising the level of medical services to the population to a new level in accordance with the seven priorities of the new Uzbekistan development strategy for 2022-2026...."improving the quality of qualified service to the population in the primary health and sanitation service...."were set. Based on these tasks, it is advisable to carry out research aimed at improving the hygiene of working conditions and preventive measures, including at pharmaceutical enterprises [5,6].

Goals and objectives. To assess the degree of impact on the body of workers of the labor process and production conditions, a study was carried out of the functional state of certain systems of the organism of workers. When studying changes in the functional state, examinations in the dynamics of the working day were carried out as follows: before work (at 8:00), before the lunch break (at 12:00) and at the end of the working day (at 16:00). The volume of research and the choice of methods are associated with the need to characterize the impact of the conditions under which the work is carried out and study the systems of the working organism, which can adequately reflect the state of the working organism in the process of professional activity.

In pharmaceutical enterprises, workers were selected in the leading professional group for conducting physiological examinations, they became Workers of the sterile solution preparation Department, workers of the ampoule cutting and preparation department, workers of the ampoule washing Department, workers of the sterile solution ampoule filling Department, workers of the solubility and sterilization Department, workers of the finished ampoule control and marking department, workers of the packaging department. It was found that functional changes in the body of workers differ by how many percent they have before work. In each group, workers from 40 to 49 years of practical health, 10-15 years of work experience, 10-12 were examined. Observations were carried out for 2 weeks, in the dynamics of the working day (before work, before lunch break and at the end of the working day), during warm and cold periods of the year. **Result.** Research Tashkent City Mirabad District T. Located at 23 Shevchenko Street, S.K. The production of injection drugs "UZKIMYOFARM" JSC named after islambekov was carried out in Tsex. Tsex, where injectable drugs are produced, is served by 132 workers, 97 of whom are women.

Average pulse frequency (PCH) (warm period of the year) during the working day of workers working in the sterile solution preparation Department $72 \pm 0,90$, $76 \pm 0,71$, $88 \pm 1,46$), (cold period of the year $70 \pm 0,74$, $75 \pm 0,73$, $85 \pm 0,97$) increased. Arterial pressure (AB) during the warm period of the year (max $115 \pm 1,27$, $118 \pm 1,32$ and $120 \pm 1,27$ mm wire.who.), (min $72 \pm 1,68$; $72 \pm 1,61$; $75 \pm 1,38$ mm sim.who.) increased during the day. In the cold period of the year, the max indicator ($114 \pm 1,22$, $116 \pm 1,00$ and $118 \pm 0,91$ mm wire.who.) slightly raised from the original result during the day, min indicator ($72 \pm 1,68$; $73 \pm 1,58$; $71 \pm 1,63$ mm sim.who.), lunch rose until the break, but by the end of the working day this figure had dropped slightly. Pulse pressure (PB) in the warm period of the year ($43 \pm 0,95$, $46 \pm 1,12$, $45 \pm 0,93$ mm sim.who.) we observed that it rose by the middle of the working day, with a slight decrease at the end of the working day. In the cold period of the year ($42 \pm 0,91$; $43 \pm 0,82$; $47 \pm 0,96$ mm sim.who.) were reliably hoisted. The pulse and minute charge of the heart were also studied in order to have a complete idea of the state of the cardiovascular system. The pulse size (yuzh) increases slightly in the warm period of the year until the lunch break ($52,936 \pm 1,52$, $54,3 \pm 1,47$), but at the end of the working day we witnessed that this indicator has recovered to the background value ($52,136 \pm 1,19$ ml). During the cold period of the year ($52,5 \pm 1,49$, $52,4 \pm 1,44$, and $55,628 \pm 1,55$ ml), we observed a slight rise by the end of the day. While the minute volume of the heart (Yudh) increased during the working day ($3811,6 \pm 120,70$, $4131,16 \pm 123,09$ and $4579,2 \pm 115,93$ ml) during the warm period of the year, even during the cold period of the year ($3681,8 \pm 116,6$; $3932,9 \pm 112,58$; $4734,3 \pm 1,48$ ml) have witnessed the increase. Moderate dynamic pressure (ODB) during the day during the warm period of the year, these results are $86,4 \pm 1,49$, $87,33 \pm 1,42$, $90,07 \pm 1,27$ mm sim.who. when taken, the result was slightly increased in the cold

period of the year (86 ± 1.48 , 87.33 ± 1.36) before the lunch break, with (86.67 ± 1.36 mm wire.who.) we observed that the working day was restored by the end.

If the average PCH of workers working in the ampoule cutting and preparation Department has increased reliably in the warm period of the year (70 ± 0.60 , 76 ± 0.81 , 82 ± 0.77), in the cold period of the year, the average before work for one working day was 72 ± 0.73 , while the result before lunch break was 76 ± 0.81 , and at the end of the working day, 75 ± 0.93 . The result of the warm period of the Year AB (max 115 ± 1.80 , 117 ± 1.50 and 120 ± 1.43 mm wire.who.) while we can see the increase, min is 71 ± 1.73 before work, 73 ± 1.50 before lunch break, 71.6 ± 1.84 mm wire at the end of the working day.who. are equal. In the cold period of the year, the first result was max 113 ± 1.63 , while the second result was 118 ± 1.12 , and the third result was 110 ± 1.47 mm of wire.who. consisting of min 72 ± 1.66 ; 73 ± 1.47 ; 71 ± 1.68 mm sim.who. founded. PB in the warm period of the year (44 ± 1.29 , 44 ± 0.91 and 49.2 ± 1.03 mm wire.who.) increased, while in the cold period of the year manifested as follows: 41 ± 1.66 ; 43 ± 1.08 ; 39 ± 1.53 mm sim.who. In the warm period of the year, the amount of 53.55 SEK before work was 1.56, in the middle of the working day 52.35 SEK was 1.32, at the end of the working day 55.8 SEK was 1.67 ml. By the cold period of the year, the results showed the same - 51.9 ± 1.55 , 52.26 ± 1.23 and 51.46 ± 1.48 ml. While Yudh confidently increased in dynamics in the warm period of the year (3754.1 ± 121.05 , 3980.02 ± 111.10 and 4572.3 ± 140.15 ml), 3740.4 before work in the cold period of the year amounted to 3967 ± 96.75 before lunch break, 3862.4 ± 12.84 ml at the end of the working day. O'DB in the warm period of the year 85.67 ± 1.65 , 87.67 ± 1.44 , 88 ± 1.65 mm sim.who. if increased, in the cold period of the year at first 85.67 ± 1.45 , then 87.33 ± 1.41 , at the very end 84 ± 1.45 mm wire.who. founded.

The average PCH of workers in the ampoule wash unit of injectable drug production tsexi tends to increase in work shift dynamics during the warm period of the year, showing an increase of 72 ± 1.01 before work to 79 ± 0.86 before lunch break, to 87 ± 0.68 Zarba at the end of the day. Even in the cold period of the year (71 ± 0.94 ; 77 ± 1.06 ; 78 ± 0.85) this situation has been repeated, which means that the results have increased throughout the day. In the warm period of AB year, the max indicator is 114 ± 1.39 , 118 ± 1.22 and 120 ± 1.18 mm wire.who. while increasing during the working day, the min indicator dropped slightly until the lunch break (72 ± 1.58 , 70 ± 1.93), and at the end of the working day (72 ± 1.85 mm wire.who.) observed a recovery up to the background value. During the cold period of the year, the indicators (max 112 ± 1.68 ; 115 ± 1.32 ; min 70 ± 1.56 ; 72 ± 1.61) increased significantly in the middle of the day, compared to the initial result at the end of the working day (max 110 ± 1.41 , min 69 ± 1.76 mm wire.who.) slightly declined. In PB working day dynamics during the warm period of the year (42 ± 1.16 , 48 ± 1.08 and 48 ± 1.16 mm wire.who.), during the cold period of the year (42 ± 1.53 ; 43 ± 1.04 ; 41 ± 0.71 mm sim.who.) these results have been recorded. Yuzhh in the warm period of the year (51.7 ± 1.47 ; 55.3 ± 1.80 ; 54.872 ± 1.80 ml) as well as cold period results (53.2 ± 1.39 , 52.48 ± 1.49 and 53.28 ± 1.38 ml) were obtained and analyzed. Yudh in the warm period of the year (3727.2 ± 128.33 , 4367.5 ± 142.75 , 4774.8 ± 160.04 ml) and in the cold period of the year (3782.1 ± 116.87 , 4026.39 ± 103.14 , 4146.98 ± 104.94 ml) from the results obtained, it is possible to know that the indicators increased during the working day. While the results were unchanged between the working day in the warm period of the year (86.13 ± 1.42 , 86.33 ± 1.65), the working day ended (88.27 ± 1.56 mm wire.who.) a slight difference has been observed. In the cold period of the year (84 ± 1.43 , 86.33 ± 1.44 , 82.67 ± 1.62 mm sim.who.) it became clear from the indicators

that the result before the lunch break had risen from a significant level, while by the end of the working day there was a slight decrease from the initial indicator.

In workers in the main professional group, which operates in the ampoule filling Department of sterile solutions, the average PCH was 71 ± 0.86 before work in the warm period of the year, during the first half of the day the figure was reliably increased to 77 ± 0.53 , and at the end of the working day 80 ± 0.58 . By the cold period of the year, the original figure was 69 ± 0.81 , while subsequent figures were 73 ± 0.79 and 74 ± 2.89 . If the previous indicator of work in the warm period of the year was max 112 ± 1.50 , min 70 ± 1.70 , then the working day came to the middle, max 115 ± 1.33 , min 71 ± 1.85 , and at the end of the working day max 118 ± 1.25 mm wire.who., min 68 ± 1.75 mm wire.who. was found to be equal. And in the cold period of the year, the first indicator is max 114 ± 1.61 , min 71 ± 1.78 , the results obtained before the lunch break of the day and at the end of the working day are max 118 ± 1.12 and 112 ± 1.38 mm wire.who., equal to, min 73 ± 1.50 and 72 ± 1.58 mm wire.who., showing. PB results during the entire working day during the warm period of the year 42 ± 0.49 ; 44 ± 0.86 ; 50 ± 0.89 mm sim.who. in the cold period of the year, the results were 43 ± 2.12 , 45 ± 1.04 and 40 ± 0.65 mm of wire.who., have been found to be equal. In the warm period of the year, the amount of $53,076 \pm 1.41$ applications before work was equal to $53,99 \pm 1.7$ applications by the middle of the working day was, and applications by the end of the working day was 58.5 ± 1.58 ml. In the cold period of the year, these results were obtained in 52.98 ± 1.83 , 52.78 ± 1.43 and 50.88 ± 1.27 ml. In the warm period of Yudh year, the initial figure was 3777.44 ± 118.79 , while the results at the time of work kuninig were 3980.02 ± 111.10 , 4572.3 ± 140.15 ml, while in the cold period of the year, the first result was 3658.048 ± 132.46 , the second and third results were 3842.3 ± 94.9 , 3773.4 ± 177.89 ml. Results obtained during three working days in the warm period of the year $84,13 \pm 1.62$, $85,86 \pm 1.64$, $84,93 \pm 1.55$ mm sim.who. indicators in the cold period of the year, if established $85,33 \pm 1.40$, 88 ± 1.29 , $85,33 \pm 1.49$ mm sim.who. are equal.

The average PCH in the employees of the soldering and sterilizing Department of our scientific research enterprise is in the warm period of the year (74 ± 1.06 , 80 ± 0.71 , 82 ± 0.67) and in the cold period of the year (69 ± 0.77 , 74 ± 1.06 , 80 ± 0.71) this data was recorded. From the results obtained, it can be seen that the indicators increased throughout the working day. AB in the warm period of the year max indicator (116 ± 1.19 , 118 ± 1.25 , 119 ± 1.20 mm sim.who.) increased reliably during the working day, while the min indicator was (71 ± 1.81 ; 72 ± 1.76 ; 68 ± 1.68 mm sim.who.) we witnessed a decrease by the end of the working day. By the cold period of the year, however, the max indicator (114 ± 1.22 , 117 ± 1.08 and 112 ± 1.35 mm wire.who.) and min indicator (71 ± 1.87 ; 73 ± 1.47 ; 72 ± 1.53 mm sim.who.) while lunch rose slightly before the break, we observed a decrease by the end of the working day. PB in the warm period of the year 45 ± 0.91 , 46 ± 1.09 , 51.4 ± 0.84 mm sim.who. increased, increased slightly before lunch break in the cold period of the year (43 ± 1.38 and 44 ± 1.04) to the end of the working day (40 ± 0.96 mm wire.who.) arrived and found that it was significantly reduced. Yuzhh in the warm period of the year ($53,844 \pm 1.58$, $53,8 \pm 1.56$, $58,8 \pm 1.51$ ml) increased at the end of the working day, and during the cold period of the year during the day ($53,4 \pm 1.78$, $52,7 \pm 1.39$, $51,288 \pm 1.38$ ml) with declining results. Yudh is also in the warm period of the year (3976.7 ± 119.46 , 4305.8 ± 123.71 and 4823.9 ± 122.7 ml), and in the cold period of the year (3671.04 ± 109.00 ; 3899.2 ± 116.11 ; 4107.336 ± 123.42 ml) increased reliably. While the O'DB increased slightly before lunch break during the warm period of the year (86.53 ± 1.58 ,

87.4±1.52), by the end of the working day (85.13±1.49 mm wire.who.) declined. In the cold period of the year, the lunch is slightly raised until the break (85.33±1.55, 87.67±1.26), but at the end of the working day this indicator is up to the background value (85.33±1.40 mm wire.who.) proved to be back.

Analysis of the results obtained shows that workers in the finished ampoule control and marking department can observe that in the warm period of the year the average PCH was equal to 1.50 per minute before work, 75± 1.05 before lunch break, 82± 0.67 at the end of work, and in the cold period of the year the average PCH was 69 1.34 before work, 73 ±0.90 before lunch break, 77± 0.87 at the end of. When the AB figures were equal to max 114 in the warm period of the year before work 1.41, min 71±1.89, before lunch break max 115±1.50, min 72±1.80, and at the end of the working day max 118 ±1.54 mm wire.who., min

70 ±1.70 mm wire.who. tied. In the cold period of the year, the same figure was established before the work max 114±1.41, min 72 ±1.87, before the lunch break max 116±1.38, min 73±1.83, and at the end of the work max 115±1.22 mm wire.who., min 71±1.76 mm wire.who. manifested.

PB in the warm period of the year, the previous figure from work was 43 ±1.04, before lunch break 43±0.80, by the end of the working day 48,6±0.74.who., equal to, in the cold period of the year, the indicators are 42 ±0.87 before work, 43 ±0.76 before lunch break, and 44±0.87 mm of wire at the end of the working day.who. the rise was manifested. In the warm period of the year, 53.0±1.71 before work, 52.6 ±1.52 before lunch break, 56.3 ±1.47 ml by the end of the working day, while in the cold period of the year, 52.12 ±1.64 equal before work, 52.02±1.57 before lunch break, 53.72 ±1.58 ml at the end of the working day. Yudh was also studied in two periods of the year, the result before work in the warm period of the year was 3707.4 ±141.42, before lunch break 3940.5±117.78, at the end of the working day, 4609.456 118.04 ml, while in the cold period of the year, before work 3600.4 ±133.3, before lunch break 3796.3±118.65, at the end of work day 41305±121.8 ML. The indicator in the warm period of the O'DB year was 85.34 ±1.68 before work, 86.47 ±1.66 before lunch break, 86.4 ±1.61 mm of wire at the end of the working day.who. when it was formed, the cold period of the year was equal to 86 ± 1.68 before work, 87.33 ±1.65 before lunch break, and 85.67 mm of wire at the end of the working day 1.55 mm.who. was found to be equivalent to. Packaging Department of the main group of workers PCH during the working day during the warm period of the year(71±0.88, 79±0.90, 83±0.72) with an increase in average, by the cold period of the year, 73±0.99 before work, 82± 0.78 before lunch, and 80±0.46 at the end of the working day. AB in the warm period of the year max indicator (114±1.55; 116±1.44; 119±1.38 mm sim.who.) increased during the working day, the min indicator was 71 ±1.63 before work, 72 ±1.44 before lunch break, and 69 ±1.70 mm wire at the end of the working day.who. is equivalent to. In the cold period of the year, the max indicator was initially 114±1.55, in the middle of the working day 117±1.44, in the last 115 ± 1.50 mm of wire.who., if established, min indicator during the working day 72 ± 1.63, 73±1.66 and 70±1.91 mm wire.who., which stood at. PB in the warm period of the year, reliably during the working day, applications of 43±0.50, 44 applications of 0.87 ±49.8 mm of wire.who. increased, even in the cold period of the year 42±0.50, 44±0.76, 45±0.91 mm sim.who. reliably increased. Results obtained at a three-way time during the working day during the warm period of the year 53,2±1.26, 53,072±1.25, 57,652±1.51 in the cold period of the year, which amounted to ml ,

52±432 tubs were made of 1.22, 52,83 tins of 1.34 and 55,132 tins of 1.64 ml. While the results obtained in the warm period of the year Yudh were observed to increase by 3782.9 g / 109.7, 4188.8 g / 99.43 and 4779.8 g / 119.26 ml, even in the cold period of the year 3830,7±103,1, 4331,1±116,04, 4414,744±139,95 ml results were increasing during the working day. In the warm period of the year, the O'DB received 85.33 C. 1.59 before work, 86.67 C. 1.38 C. between working days, 85±81.55 mm of wire at the end of the working day.who. organized, results in the cold period of the year 86±1,59, 87,67±1,55, 85±1,73 mm sim.who. made a slight difference.

Conclusion.

Thus, all of the above allowed us to draw the following conclusion: in the process of labor activity, workers of the pharmaceutical enterprise are observed shifts that describe the mobilization of functional reserves of the cardiovascular system, and changes are mainly shifts that do not deviate from the range of physiological reactions, which may be due to the effectiveness of adaptation of physiological processes

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