PREPARATION OF POWDERS WITH TOXIC AND POTENT SUBSTANCES

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Annotation: *When preparing powders with toxic and potent substances (including narcotics and intoxicants), it is necessary to follow the rules for working with them. Poisonous medicinal substances are obtained upon request. On the front side of the written control passport (WCP), the pharmacist signs for the issuance, and the assistant signs for the receipt of the required amount of the toxic substance, indicating its name and quantity. When receiving a toxic substance, the pharmacist must ensure that the name on the bar corresponds to the purpose in the prescription, as well as that the weights are set and weighed correctly.*

Key words: *toxic substance, prescription, potent substance, narcotics, intoxicant, sugar, distribution method, pharmacopoeial doses, complex powder, triturations, milk sugar*

INTRODUCTION

Preparation of complex powders with potent substances.

Rp.: Dimedroli 0,05
Sacchari 0,3
Misce, fiat pulvis
Da tales doses № 6
Signa. 1 powder 3 times a day

A complex dosed powder for internal use, which contains a potent substance (diphenhydramine) and a crystalline substance - sugar. The powder was prescribed by distribution method. It is necessary to check whether single and daily doses of diphenhydramine are overestimated by comparing the prescribed doses in the prescription with pharmacopoeial doses:

highest single dose (i.d.) - 0.1 g
highest daily dose (i.d.) - 0.25 g
therapeutic single dose (l.d.) - 0.05 g (according to prescription)
therapeutic daily dose (l.d.) - 0.05x3 = 0.15 g
Doses are not overestimated

Before preparation, first determine the mass of each ingredient for all doses of powders. To do this, the mass of one dose of the medicinal substance (according to the prescription) is multiplied by the number of doses indicated in the prescription:

Diphenhydramine 0.05x6 = 0.3 g

Sugar 0.3x6 = 1.8 g

Then the weighing is determined - the dose of complex powder per dose. For this, there are two methods of calculation: either the single doses of medicinal substances are summed up according to the prescription (0.05 + 0.3 = 0.35 g), or the total mass of the powder mixture is divided by the number of prescribed doses ((0.3 + 1.8) : 6 = 0.35 g). 1.8 g of sugar is ground in a mortar, after which approximately 0.3-0.4 g is left in the mortar, and the remainder is poured onto the capsule. Then place 0.3 g of diphenhydramine in a mortar, mix thoroughly with sugar, add the rest of the sugar in parts, mix until smooth. Before adding each subsequent portion of sugar, remove the powder mixture adhering to them using a celluloid plate from the walls of the mortar and pestle. The resulting mixture is dispensed into 6 doses of 0.35 g each into waxed capsules.

Trituratio. If the recipe states that the total amount of a toxic or potent substance is less than 0.05 g for all powders, then triturations are used. The word "trituration" comes from the Latin. trituratio - rubbing. Triturations are pre-prepared mixtures of toxic and potent medicinal substances with fillers. The use of triturations is necessary to ensure sufficiently accurate dosing of poisonous and potent drugs, since a sample of a drug substance less than 0.05 g cannot be weighed with the required accuracy. Sometimes toxic substances are prescribed in such minimal quantities that they cannot be weighed on a hand scale. In addition, triturations make a more uniform distribution of small quantities of a poisonous or potent substance in the total mass of the powder.

Preparation of triturations. Most often, milk sugar (Saccharum lactis) is used as a filler in triturations, since it has a number of advantages over other fillers: it is non-hygroscopic, most indifferent compared to other substances in chemical and pharmacological terms, odorless, has a weak sweet taste, non-toxic, the density of milk sugar (1.52) is close to the density of toxic substances, which to a certain extent prevents the mixture from separating. Triturations from toxic drugs, single doses of which are expressed in milligrams in the recipe, are usually prepared in a ratio of 1:100 (1% of the toxic component, that is, take 1 part of the toxic drug and 99 parts of the filler), and from drugs whose doses are expressed in centigrams, in a ratio of 1:10 (10% of the toxic component, that is, take 1 part of the toxic agent and 9 parts of the filler). In the first case, 1.0 g of trituration is equal to 0.01 g of a toxic substance, and in the other, 1.0 g of trituration is equal to 0.1 g of a toxic substance. So, for example, to prepare 10.0 g of 1% trituration of atropine sulfate, you need to take 0.1 g of atropine sulfate and 9.9 g of milk sugar. 9.9 g of milk sugar is ground in a grated mortar, removed per capsule, leaving 0.1 g (an equal amount of the toxic substance) and mixed with 0.1 g of atropine sulfate. Then gradually add the remainder of the milk sugar in several additions (with thorough mixing). The uniformity of the prepared triturations depends on the thoroughness

of grinding the toxic substances with the filler. It should be taken into account that when storing triturations with toxic drugs that have a significantly higher density than milk sugar, for example, mercury dichloride, arsenic anhydride, etc., they separate. Therefore, such triturations must be thoroughly mixed each time in a mortar before use.

CONCLUSION.

Triturations are prepared in quantities sufficient to meet approximately one month's need for them. Triturations are stored in small containers with ground-in stoppers and the appropriate inscriptions on the labels:

Trituratio Atropini sulfatis (1: 100) cum Saccharo lactis (0.001 Atropini sulfatis = 0.1 triturationis 1: 100). Date of; Series number; Analysis No.; signature of the person who prepared the trituration; signature of the person who checked the trituration.

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