MODERN CONCEPTS OF SIDE EFFECTS OF LOCAL ANESTHETICS

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Relevance: Most surgical procedures are accompanied by pain of varying intensity, so pain relief is one of the most pressing issues in traumatology. Local anesthetic drugs are considered safe for use in traumatology. The cause of adverse reactions in the form of paresthesia in both surgical and non-surgical traumatological interventions using drugs from the local anesthetic group is usually associated with direct trauma from injection, edema, hematoma. Paresthesia is defined as neuropathy with altered sensations and persistent anesthesia with a variety of symptoms, including sensory dysfunction.

Studies have been conducted to study the cause of paresthesia development due to potential neurotoxicity of local anesthetics. In the study by Piccini C. et al., aimed at assessing possible adverse reactions due to the use of local anesthetics, cases of adverse reactions to lidocaine, bupivacaine, articaine, prilocaine, and mepivacaine were analyzed. Data confirming the neurotoxicity of local anesthetics are included in the study results and confirm the persistence of paresthesia after injection. The severity of paresthesia was also associated with the duration of altered sensations.

Despite the fact that in most cases the nerve affected by the anesthetic can spontaneously recover within 8 weeks, in some cases this side effect may not be eliminated within 6-18 months or may not even go away at all due to the inability to restore excitation conduction along the nerve fiber. This ADR was observed with the use of articaine, lidocaine and prilocaine. All ADRs reported with the use of any local anesthetic were summarized. From 2014 to 2021, 17,246 reports on any ADRs of local anesthetics were collected, resulting in 18,574 pairs (DR/ADR). It was found that the most severe ADRs are various types of paresthesia, in some cases (2-3%) persisting for life. The significance of pairs may be higher, since one ADR may be associated with several drugs. The maximum number of cases of paresthesia was established for lidocaine, bupivacaine, articaine.

Tissue damage during histological examination was detected with the administration of a 4% solution of articaine and was not detected with the administration of a 2% solution [19]. In the study by Pogrel M.A. [23] also showed how unsafe the use of anesthetics is, and emphasized the possibility of developing paresthesia with prilocaine in 34% of the studied cases, articaine

• in 33%, lidocaine - in 25%, respectively. The authors concluded that all local anesthetics are neurotoxic.

In the study of Gaffen A.S. et al. [24], non-surgical trauma interventions were analyzed over 11 years. During the study period, about 60% of cases of paresthesia were associated with the use of articaine solution, about 16% - with the use of prilocaine, about 13% - lidocaine, about 3% - mepivacaine, there were no reports of paresthesia with the use of bupivacaine. All drugs were administered in a dose of about 1.8 ml, in the form of a 4% solution. In the study of Garisto G.A. et al. [25] Also, only cases of non-surgical intervention over 11 years with the introduction of articaine, bupivacaine, lidocaine, mepivacaine, prilocaine were analyzed.

References:

1. Алимова, Л. А., Бегманов, С. А., Нигматов, Н. Н., & Абидова, Н. А. (2015). Некоторые аспекты развития инфекционно-аллергического и токсического гепатита и цирроза печени. Science for Education Today, (1 (23)), 80-87.
2. Абидова, Н. А., Бегманов, С. А., Махкамова, Н. Х., & Базарова, Ш. Ю. (2019). К ВОПРОСУ ПАТОГЕНЕЗА СОЧЕТАННОГО АТЕРОСКЛЕРОЗА. ББК 72я43 А 19, 131.