

PROGNOSIS OF CARDIAC COMPLICATIONS IN ENDOCRINE SURGERY**S.Sh. Joniev^{1,2}, A. Fazilov¹, M. Azimov¹**

¹Samarkand State Medical University, ²Samarkand regional branch of the Republican specialized scientific practical medical center of Cardiology, Samarkand, Uzbekistan

Abstract:Thyroid disorders rank among the most prevalent conditions in endocrinology. Cardiovascular complications associated with these disorders not only impair patients' quality of life but also substantially elevate the risk of adverse surgical outcomes, with surgery being the primary definitive treatment. Consequently, many researchers in scientific literature regard both existing and emerging thyrotoxicosis as contraindications for elective thyroid surgery. Recent advancements have significantly broadened the scope of anesthesiological techniques employed during thyroid gland procedures. This article evaluates the preoperative preparation of patients with toxic and non-toxic goiter, as well as their management during the perioperative period.

Keywords: thyroid gland, toxic goiter, non-toxic goiter, thyrotoxicosis, premedication, analgesics, ketamine, narcotic analgesics, sevoflurane, xenon.

According to the World Health Organization, more than 300 million people worldwide are infected with endemic goiter, which is 7% of the world's population. Diffuse non-toxic and nodular goiter occupies an important place in the structure of morbidity of the population and is second only to diabetes in terms of frequency of occurrence among endocrine diseases [4]. The prevalence of nodular and mixed goiters in the population is 21%, and all of them require surgical treatment [3,4]. There have been no cases of decrease in the high rates of the disease. In the last 10 years, thyroid gland surgery has significantly developed abroad and in our country. The effectiveness of the treatment of diffuse nontoxic and nodular goiter, including thyroid pathology, with drugs and surgery, has been substantiated by many studies, in which the metabolism and mechanism of action of thyroid hormone biosynthesis, as well as toxic goiter, has been studied [5]. Although significant progress has been made in the field

of anesthesia of patients with diffuse non-toxic and nodular goitre, it is observed that there are complications during the operation and in the postoperative period with possible blood circulation disorders. Detection of obvious changes in the cardiovascular system reduces the effectiveness of surgical treatment. According to the research of Russian scientists, postoperative complications of patients with such pathology were 1-4% [2], according to the data of foreign researchers, 5-10% [1]. There are no clearly developed data on diffuse non-toxic and nodular goitre in the preoperative period. It is known that many complications were observed in the period before receiving iodine, that is, when the operation was performed without special preparation, during the operation and in the postoperative period [5]. Combined preoperative preparation has been used for many years, resulting in a significant reduction in early postoperative complications. Complications observed as a result of the use of thyrostatic drugs in patients with diffuse toxic goiter: increased blood pressure, monitoring of arrhythmias, use of iodine therapy and antiarrhythmic drugs, as well as cardiac glycosides to prevent excessive bleeding [7]. On the other hand, preoperative preparation is important for surgical treatment of patients with diffuse nontoxic and nodular goiter. Due to the high risk of developing postoperative complications in patients with partial symptoms of thyrotoxicosis who are not properly prepared, it is dangerous to operate on this group of patients. Proper systematic preoperative preparation reduces the likelihood of postoperative complications.

Purpose of work

Analysis of preoperative preparation methods in patients with thyroid diseases (diffuse nontoxic and nodular goiter) and evaluation of their effectiveness.

Inspection materials and methods

The study was conducted in the departments of surgery, anesthesiology and resuscitation of the multidisciplinary clinic of the Samarkand State Medical University. 110 patients were taken for examination: shortness of breath due to the size of the

thyroid gland, which was present in all patients, MNS function (responsibility, headache, decreased work ability, sleep disturbance), cardiovascular system (palpitations, rapid heart rate, expansion of heart borders) signs of deterioration, signs of diffuse damage to the myocardium (on ECG), as well as damage to the digestive system changes such as weight loss, increased or decreased appetite, etc. All patients underwent complete clinical and diagnostic examination, necessary paraclinical and biochemical examinations. All patients underwent thyroid palpation, thyroid ultrasound examination (UTT), and general clinical examinations that determined the amount of thyrotropin hormone. The examined patients were divided into 2 groups: 55 patients were included in the main group, and in addition to traditional drugs, stress protector and adaptogenic drug: adaptol 500mg 2 times a day and cardioselective beta₁-adrenoblocker : bisoprolol 10mg a day were added to the complex preparation before surgery; 55 patients were included in the control group , and they were pre-operatively prepared with traditional preparations (cocarboxylase, panangin, ascorbic acid, riboxin in generally acceptable doses). Systolic arterial blood pressure (sysAKB), diastolic arterial blood pressure (diastAKB), mean arterial pressure (UAB) and heart rate (UUS) in both groups of patients in 5 stages: 1st stage - at the hospital, 2nd stage - 2 after surgery day before, 3- 1 day before surgery, 4- after premedication, 5- 1- after surgery inspections and observations were carried out during the day.

Results and their discussion

Our investigations showed that in both groups, no distinguishing signs were detected in hemodynamics during hospitalization. When observing the changes in hemodynamics step by step, it was observed that in the control group patients, in the preoperative period, before the start of anesthesia induction, sAQB, dAQB, UAB and YuUS increased compared to the first stage.

Hemodynamic changes evaluating the patient's general condition are presented in the table (see Table 1). In the 1st stage, the hemodynamic indicators in groups 1 and

2 were around the same indicators, which can be attributed to the stress of patients arriving at the hospital.

In the 2nd stage, as a result of the pre-operative preparation process, the patients in the groups were observed to have differences in hemodynamic indicators. That is, group 1 sys.AQB up to 7-8%, dias.AQB up to 6-7%, medium.AQB up to 7-8%, YuKS 7 It was observed to decrease to %. In group 2, these indicators were around 2-3%. This shows the effect of pre-operative preparatory measures and moderation of the patient's psycho-emotional condition.

In the 3rd stage, hemodynamic parameters in group 1: sys.AQB (mm.cm.ust.) decreased to almost normal values 120.9 ± 1.3 , dias.AQB 87.1 ± 0.7 , average.AQB $98.4 \pm 1, 0$, YuUS ta/min is equal to 78.5 ± 0.8 . 2nd group.AQB 138.9 ± 1.3 , dias.AQB 97.1 ± 0.9 , average.AQB 111.3 ± 1.2 , YuUS ta/min was 84.3 ± 0.7 . In the 5th stage, in the 1st group, sys.AQB was 111.3 ± 1.2 , dias.AQB was 72.4 ± 0.8 , average.AQB was 85.4 ± 0.8 , YuKS was 76.6 ± 0.7 . In group 2, sys.AQB 128.3 ± 1.2 , dias.AQB 86.4 ± 0.9 , average.AQB 100.4 ± 0.9 , YuUS ta/min was 85.3 ± 0.8 . The changes in the next stages showed the hemodynamics and stress hormones in the mine to be at the same level, and ensured that the pre-operative preparation and the anesthesia process went without complications.

The studied hemodynamic indicators in patients with thyroid disease of the 1st group remained stable until the 5th stage. In particular, in the patients of group 1, the normalization of AQB, stabilization of the number of heart contractions was observed, and it was determined that his general condition changed in a positive direction. An increase in hemodynamic indicators was observed in the patients of the 2nd group.

Glucose and cortisol, which examined the patient's plasma, as a result of tests, the amount of glucose and cortisol remained almost unchanged in the main group of patients. It showed that the patients used complex drugs in the pre-operative preparation and adequate anesthesia during the operation. In the second group of

patients, it was shown that the amount of glucose and cortisol in the blood increased in the period after the operation, indicating the low effectiveness of pre-operative preparation and the lack of anesthesia.

Hemodynamic changes in the main stages of the perioperative period in patients operated on with thyroid disease

Table #1

Check buttons	sis. AQB		dias.AQB		medium. AQB		Yu U S ta/min		The amount of glucose in the deposit (mmol /l		Cortisol (μmol /l)	
	1 group	2 group	1 group	2 group	1 group	2 group	1 group	2 group	1 group	2 group	1 group	2 group
1st step - when stationary	157.5 ± 1.6	156.3 ± 1.3	107.5 ± 1.0	105.5 ± 1.3	124.2 ± 1.0	122.4 ± 1.1	89.7 ± 1.1	94.6 ± 1.2	4.5 ± 0.6	4.8 ± 0.7	0.6 ± 0.4	0.9 ± 0.9
2nd dose - 2 days before surgery	137.2 ± 1.6 >0.05	145.2 ± 1.6 p>0.05	95.3 ± 0.9 >	102.3 ± 0.8 >	109.3 ± 0.8 >	116.6 ± 0.9 >	81.8 ± 0.9 >	88.5 ± 0.8 >				

			0.0 5				0.0 5					
3- 1 day before the operation	120. 9 ± 1.3	138. 9 ± 1.3	87. 1 ± 0.7	97.1 ± 0.9	98.4 ± 1.0	111. 3 ± 1.2	78. 5 ± 0.8	84.3 ± 0.7				
4- after premedication	118. 5 ± 1.3 r > 0.05 r 1> 0.05	135. 5 ± 1.3 r > 0.05 r 1> 0.05	79. 1 ± 0.7 p < 0.05 r 1> 0.05	89.1 ± 0.8 r > 0.05 r 1> 0.05	92.2 ± 0.8 p < 0.05 r 1> 0.1	104. 5 ± 0.9 p < 0.05 r 1> 0.1	75. 3 ± 0.7 p < 0.05 r 1> 0.1	82.4 ± 0.8 p < 0.05 r 1> 0.05				
day after surgery	111. 3 ± 1.2 r > 0.00 1 r 1> 0.05	128. 3 ± 1.2 r > 0.00 1 r 1> 0.05	72. 4 ± 0.8 p < 0.00 01 r 1> 0.2	86.4 ± 0.9 p < 0.00 1 r 1> 0.2	85.4 ± 0.8 p < 0.01 r 1> 0.1	100. 4 ± 0.9 p < 0.01 r 1> 0.1	76. 6 ± 0.7 p < 0.01 5 r 1> 0.3	85.3 ± 0.8 p < 0.05 r 1> 0.3	5.6 ± 0.3	8. 5 ± 0.4	0. 71 ± 0.2	0. 8 ± 0.8

Izo h :r is the first stage check with in comparison reliability k ' indicator ;

r1- previous stage check with in comparison reliability index k ' .

Checked indicators from surgery previous from indicators a convincing difference was made . Main in the group in patients heart stroke count and AQB are normal to indicators decline it 's been a long time . From the operation next early in the

above period kursatki to the norm near the arrival it's been a long time. Patient pay attention to the presence of headache, pain in the heart area, no increase in blood pressure.

Conclusion. Thyroid disease (diffuse non-toxic and knotty this q o q i) b died patients operation preparedness methods analytical showed that to them from surgery in the previous comprehensive preparation traditional preparations with one A stress protector and adaptogenic drug: adaptol and Cardioselective beta₁ - adrenoblocker: bisoprolol like drug the use of tools from surgery previous and operation and in q ti observation possible hemodynamic changes eliminate to ask help gives and from surgery later and q in t development may be dead complications prevention takes

Literature

1. Balabolkin M.I., P.S. Vetshev, N.A. Petunin, L.V. Truxin. "Chirurgicheskoe lechenie diffuzno-toksicheskogo zoba i vozmojnost prognozirovaniya ego rezultat"-Moscow, Problemy endocrinologii. — 2000. — T 46. — No. 4.
2. Balabolkin M.I., Klebanova E.M., Kreminskaya V.M. Fundamentalnaya and clinical thyroidology (rukovodstvo). — M.: Medicine, 2007. — 816 p.
3. Dedov I.I., Balabolkin M.I., Marova E.I. Endocrine organ disease. — M.: Medicine, 2000. 257 p.
4. Aralov U.A. Joniev, S. Sh., Rakhimov, A. U. Improving the effectiveness of preoperative preparation methods in thyroid surgery [Text] / A.U. Aralov, S. Sh. Joniev, A. U. Rakhimov // Problemy biology and medicine. — 2015. — No. 1. — S. 11-14.
5. Joniev S.Sh., Rakhimov AU, Comparison of methods of preoperative preparation in thyroid gland / Joniev S.Sh., Rakhimov AU, [Text] // VI International conference "Sharing the results of research towards closer global

- convergent of scientists". — Ontario, Canada: 1807-150 Charlton Ave. East Hamilton, 2015. — S. 38-43.
6. Joniev, S. Sh., Babajanov, A. S. Assessment of pre-operative preparation and effectiveness of anesthesia in thyroid pathology operations / S. Sh. Joniev, A. S. Babajanov [Text] // Proceedings of the Samarkand regional scientific practical conference "XXI century - the century of the intellectual generation". — Samarkand, Uzbekistan: SamDChTI publishing house, 2016. — S. 190-193.
 7. Joniev S.Sh. Features of preoperative preparation and anesthesia in thyroid pathology [Text] / Joniev S.Sh. // British Medical Journal. — 2022. — No. Volume-2, No. 4. — S. 212-215.
 8. Joniev S.Sh. Anesthesiological allowance for operations for diffuse goiter [Text] / Joniev S.Sh. // Journal of integrated education and research. — 2022. — No. Volume 1, Issue 5. — S. 19-26.
 9. Joniev S.Sh. Improving the results of anesthesia in thyroid pathology [Text] / Joniev S.Sh. // Uzbek medical journal. — 2022. — No. Volume 3, Issue 3. — S. 23-28.
 10. Joniev S. Sh., Pardaev Sh. K. Use of general multicomponent anesthesia in thyroid operations [Text] / S. Sh. Joniev, Sh. K. Pardaev // A new day in medicine. — 2021. — No. 6 (38/1). — S. 443-479.
 11. Joniev S.Sh. Determining the level of preoperative preparation and conducting anesthesia in patients with thyroid pathologies [Text] / Joniev S.Sh. // Danish Scientific Journal (DSJ). — 2022. — No. 59. — S. 19-23.
 12. Joniev S.Sh. Improvement of the results of anesthesia in thyroid pathology [Text] / Joniev S.Sh. // Annali d'Italia. — 2022. — No. Vol 1. 30. — S. 78-82.
 13. Joniev S.Sh., Yakubov I., Pormonov Kh., Daminov I., Ensuring adequate premedication in patients with thyroid pathology [Text] / Joniev S.Sh., Yakubov I., Pormonov Kh., Daminov I., // Norwegian Journal of development of the International Science. — 2022. — No. 86. — S. 17-20.

14. Joniev S.Sh., Tukhsanbaev S., Kurbanov K., Abdaliev D., Predicting the effectiveness of anesthesia in thyroid pathology [Text] / Joniev S.Sh., Tukhsanbaev S., Kurbanov K., Abdaliev D., // Polish journal of science. — 2022. — No. 51. — S. 30-34.
15. Joniev S.Sh., Ganiev A., Ibrokhimov Z., Melikboboev A., Analysis of the effectiveness of anesthesia methods in thyroid pathology [Text] / Joniev S.Sh., Ganiev A., Ibrokhimov Z., Melikboboev A., // Znanstvena misel journal Slovenia. — 2022. — No. 67. — S. 32-35.
16. Joniev S.Sh., Pardaev Sh.K., Muhammadieva U., Analysis of methods of general anesthesia in thyroid surgery based on hemodynamic parameters [Text] / Joniev S.Sh., Pardaev Sh.K., Muhammadieva U., / / Turkish Journal of Physiotherapy and Rehabilitation. — 2021. — No. 32(3). — S. 7136-7140.
17. Joniev, S. Sh., Khushvaktov, U. O. Assessment of hemodynamic indicators during anesthesia in endocrine surgery [Text] / S. Sh. Joniev, U. O. Khushvaktov // A new day in medicine. — 2020. — No. 4. — S. 150-154.
18. Joniev, S. Sh., Pardaev, Sh. K. Use of general anesthesia in thyroid operations [Text] / S. Sh. Joniev, Sh. K. Pardaev // Biomedicine and practice. — 2021. — No. 4. — S. 59-67.
19. Joniev S.Sh., Pardaev Sh.K., Akramov BR, Hushvakov UO, Monitoring And Evaluation Of Hemodynamic Parameters During Anesthesia In Endocrine Surgery [Text] / Joniev S.Sh., Pardaev Sh.K., Akramov BR, Hushvakov UO , // The American Journal of Medical Sciences and Pharmaceutical Research. — 2020. — No. 2(12). — S. 40-46.
20. Joniev S.Sh., Hemodynamic aspects of multicomponent general anesthesia and endocrine surgery [Text] / Joniev S.Sh., // MEDICUS International Medical Scientific Journal. — 2020. — No. No. 5 (35). — S. 8-13.
21. Joniev, S. Sh., Pardaev, Sh. K., Goyibov, S. S., Akramov, B. R. Use of a modified method of preoperative preparation and anesthesia and surgery of the thyroid gland / S. Sh. Joniev, Sh. K. Pardaev, S. S. Goyibov, B. R. Akramov

- [Text] // Collection of scientific articles XIV International correspondence scientific specialized conference. — Boston: PROBLEMS OF SCIENCE, 2019. — S. 175-186.
22. Joniev S. Sh., Khushvaktov U. O. Rational hemodynamic monitoring of anesthesiological procedures and endocrine surgery // Actual diagnostic questions and treatment of novel coronavirus infection. - 2020. - S. 6-11.
23. Joniev, S. Sh., Muminov, A. A., Khushvaktov, U. O. Peri operative period and endocrine surgery: puti reshenia anesthesiologicheskikh problem [Text] / S. Sh. Joniev, A. A. Muminov, U. O. Khushvaktov // Eurazisky Soyuz Uchenykh. — 2020. — No. 5-6 (74). — S. 38-41.
24. Joniev S. Sh., Rakhimov A. U. Varianty preoperatsionnoy podgotovki pri operatsiyax na shchitovidnoy jjele [Text] / Joniev S. Sh., Rakhimov A. U. // Nauka i mir. — 2014. — No. 11-2. — S. 138-141.
25. Joniev S. Sh., Influence of complex preoperative preparation and biochemical indicators on blood of patients with nodular zobos [Text] / Joniev S. Sh., // Doctor's newsletter. — 2013. — No. 1(3). — S. 71-73.
26. Joniev S. Sh., Rakhimov, A. U., Babajanov, A. S. Znachenie biochemical pokazatelei pri preoperatsionnoy pregotovki bolnykh uzlovym zobom [Text] / A. U. Rakhimov, A. S. Babajanov // Science and world. — 2013. — No. 9(136). — S. 136-138.
27. Joniev S. Sh., Babajanov A. S., Khushnaev S., Sultanova S. Uluchshenie metodov preoperatsionnoy prepgotovki i anestheziy v perioperatsionnom periode zbolevani schitovidnoy izlezny [Text] / Joniev S. Sh., Babajanov A. S., Khushnaev S., Sultanova S. // European research. — 2018. — No. 5. — S. 135-138.
28. Joniev S. Sh., Babajanov A. S., Rakhimov, A. U. Analysis of the effectiveness of variants of preoperative preparation and anesthesia and treatment of pain in the thyroid gland [Text] / Joniev S. Sh., Babajanov A. S., A. U. Rakhimov // Problemy biology and medicine. — 2017. — No. 1. — S. 93-95.

29. Joniev S.Sh., Determining the effectiveness of preoperative preparation of bolnykh uzlovym zobom na osnovanii biochemical pokazateley. [Text] / S. Sh. Joniev // Problemy biology and medicine. — 2014. — No. 1 (77). — S. 14-18.
30. Joniev, S. Sh. Modified method of preoperative preparation and anesthesia in operative treatment of pathology of schitovidnoy signs / S. Sh. Joniev [Text] // Materialy mejregionalnogo nauchno-prakticheskogo foruma s mejdunarodnym uchastiem "Zdorove semi — budushchee Rossii". — Izhevsk: OOO "MedEkspoForum", 2019. — S. 37-40.
31. Joniev, S. Sh. Pre-operative preparation and anesthesia during operation with no shield / S. Sh. Joniev [Text] // Sbornik tsikla leksii "Anesteziya u pasitinov s soputstvuyushchimi zabolevaniyami i pri razlichnyx tipax khirurgicheskikh vmeshatelstv". — Samarkand: SamGMI, 2015. — P. 72-81.
32. Rakhimov, A. U., Joniev, S. Sh. Assessment of the effectiveness of general anesthesia methods in thyroid pathology operations [Text] / A. U. Rakhimov, S. Sh. Joniev // Problemy biology and medicine. — 2022. — No. 4,1(138). — S. 118-125.