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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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TRANSFORMATION OF MYELODYSPLASTIC SYNDROME INTO ACUTE MYELOBLASTIC LEUKEMIA (CLINICAL CASE)

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Abstract.

Despite the availability of modern methods for diagnosing and treating myelodysplastic syndrome (MDS) in the arsenal of a hematologist, even with an adequate treatment strategy, it is not always possible to predict the timing of transformation of the disease into acute myeloid leukemia. The clinical case we presented demonstrates the rapid transformation of MDS into acute myeloid leukemia in a relatively young patient whose prognosis turned out to be poorly predictable despite a change in therapy.

Key words. Myelodysplastic syndrome, acute myeloblastic leukemia.

Introduction.

Myelodysplastic syndrome (MDS) is a group of heterogeneous acquired clonal hematological tumors, united by a common origin from a hematopoietic stem cell with impaired differentiation of cells of one, two or three hematopoietic lineages. MDS is characterized by cytopenia, signs of dysmyelopoiesis and a high risk of transformation into acute myeloid leukemia [1-16,3,4,6,10,13]. In Europe and the United States, the incidence of MDS in the general population is 4-5 cases per 100,000 population per year, with approximately 25,000 new cases diagnosed annually. The main contingent (more than 80% of patients) are people over 60 years of age. MDS is extremely rare among young people. There is no centralized registration of patients with MDS, and the detection of the disease remains low. There are no statistical data on the incidence and prevalence of MDS in Kazakhstan. The course of MDS can vary from latent to aggressive, so making clinical decisions regarding the timing of initiation of therapy for the disease is a rather complex process. According to various authors, the risk of MDS developing into acute leukemia is 30% [4,5,11,13].

The choice of treatment methods depends on many factors - the patient's age, membership in a risk group, the presence and severity of concomitant pathology, the type of MDS, and the presence of an HLA-compatible donor.

The clinical case presented below demonstrates the complexity of diagnosing and managing a patient with MDS.

Description of the clinical case.

Patient T., 46 years old, was transferred to the hematology department of the multidisciplinary city hospital No. 1 of Astana in November 2018 from the cardiology department of the same hospital with a diagnosis of refractory anemia with excess blasts. In the cardiology department, the patient was hospitalized with a diagnosis of coronary artery disease: arrhythmic variant with symptoms of CHF III (NYHA), as well as arterial hypertension of the 3rd degree. risk 4. In the peripheral blood test, the hemoglobin level was 67 g/l; red blood cell count – 1.72 x1012/l; MSN – 39 pg; leukocyte count -8.3 x109/l; in the leukogram: blasts were 14%, myelocytes - 9%; s/y neutrophils - 6%; monocytes-8% lymphocytes – 67%; platelet count - 71x109/l; ESR - 64 mm/h. I had not been seen by a hematologist before (Figure 1).

History includes splenectomy (2012) due to splenic infarction and replacement of aortic and mitral heart valves.

Objectively: The patient's general condition is serious. Temperature is 38 degrees Celsius. The skin and visible mucous membranes are pale, there are no hemorrhages. In the lungs there is vesicular breathing, isolated dry rales. Respiration rate is 26 per minute. Saturation 92%. Heart sounds are weakened, the sound of mechanical valves is heard. BP=140/100 mmHg. Pulse=96 per minute. The abdomen is soft and painless on palpation, the liver protrudes 2 cm below the costal arch. There is pastiness on the legs and feet.

Myelogram data dated November 16, 2018 - Hypocellular bone marrow punctate. Differential counting was performed on 500 cells. The type of hematopoiesis is normoblastic. The erythroid sprout is hyperplastic -91%, due to mature forms of erythrokaryocytes, maturation in the sprout is not impaired, signs of dyshemopoiesis are noted. The granulocytic lineage is sharply narrowed -4%. Megakaryocytes are not represented by specimen drugs are not presented.

Histological examination of trephine biopsy specimen of the ilium from November 19, 2018: Macrodescription: Trephine biopsy specimen of the iliac crest, 1.5 cm long, dark cherry color. In the studied histological preparations, stained with hematoxylin and eosin: Trepanobiopsy of bone marrow, 2/3 represented by bone tissue and the subcortical zone and only 1/3 represented by beams with bone marrow, in the interbeam space - fat vacuoles. In the areas to be assessed, hypercellularity is noted due to hyperplasia of the erythroid germ: an increase in the proportion of immature and maturing normoblasts and pronormoblasts; Megaloblastic maturation and an increase in the size of cells and nuclei are determined. The islet type of structure is blurred, blood sprouts are displaced. Megakaryocytes are not traceable. With additional Gomori staining, the reticulin fibers were not stained. Conclusion: the morphological picture is more typical for dysplastic changes in myelodysplastic syndrome (see Figure 2).

The diagnosis was confirmed by IHC research at the VGNC (Moscow) on November 27, 2018. No. K02863\18 - In the histological preparation No. 52906, made from a paraffin block, the bone marrow trephine biopsy is small in volume and is represented by the periosteum and single subcortical bone marrow cavities, in which hypercellular bone marrow is determined (relative to the age norm). Erythroid and granulocytic lineages are in approximately equal proportions. The erythroid germ is represented by clusters of erythrokaryocytes with signs of dyserythropoiesis - morphological signs of apoptosis.

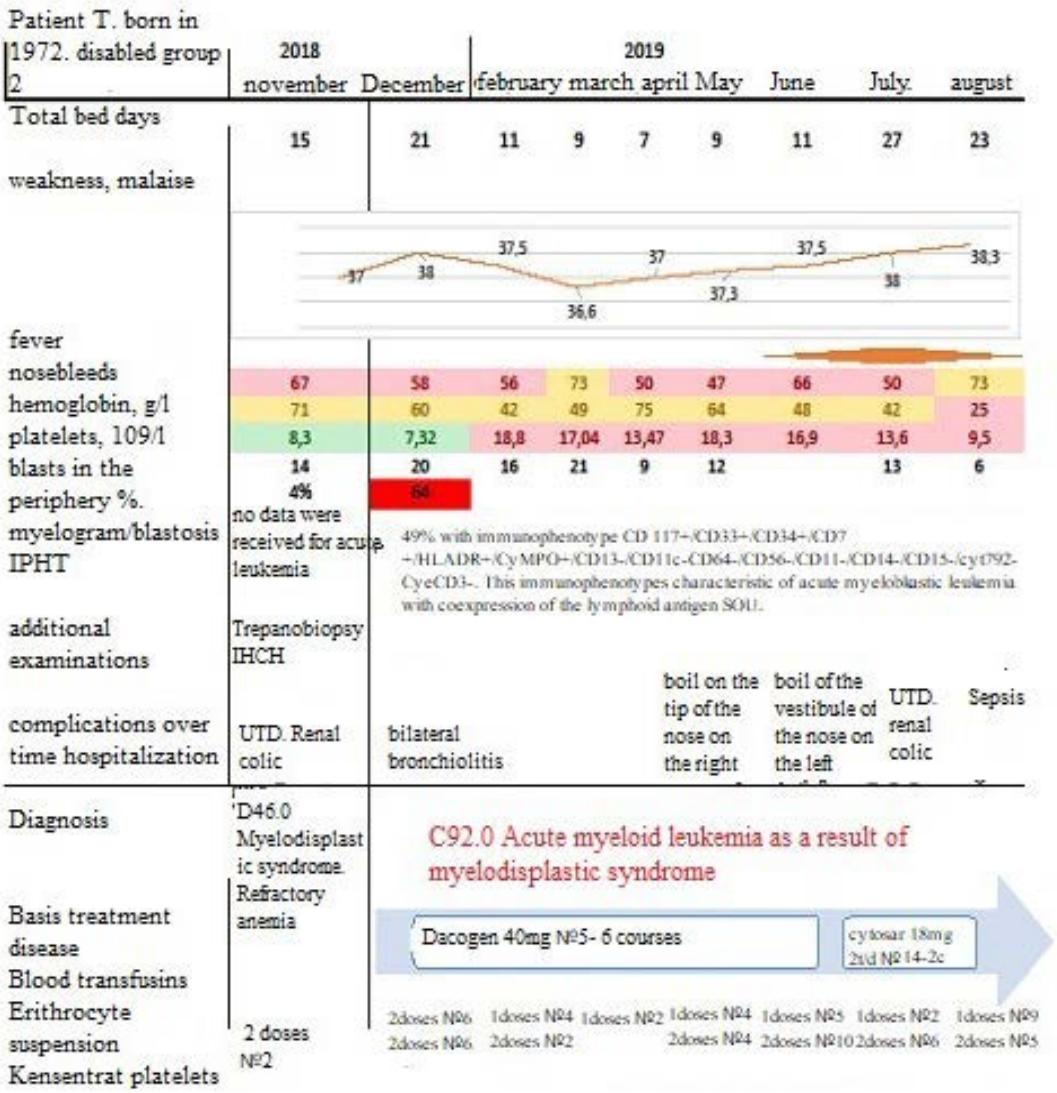

Figure 1. *History chart of patient T., 46 years old.*

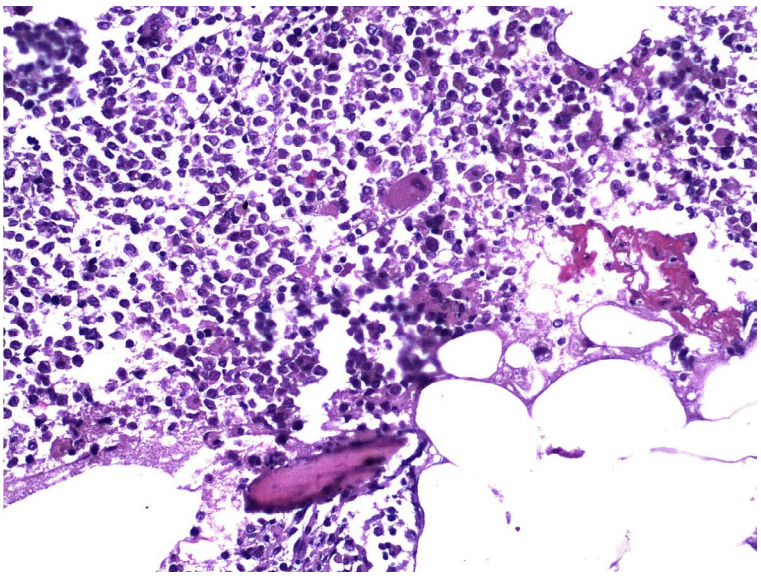

Figure 2. *Hypercellular bone marrow Hematoxylin and eosin staining. Magnification10x0.25.*

The granulocyte lineage is represented by elements of the predominantly intermediate pool. MCCs are few in number, small in size with mono- and bilobular hyperchromic nuclei; microforms are present - signs of dysmegakaryocytopoiesis. Small lymphoid cells, mature plasma cells are scattered interstitially, the stroma is full-blooded, hemosiderin grains are visible (Figure 3).

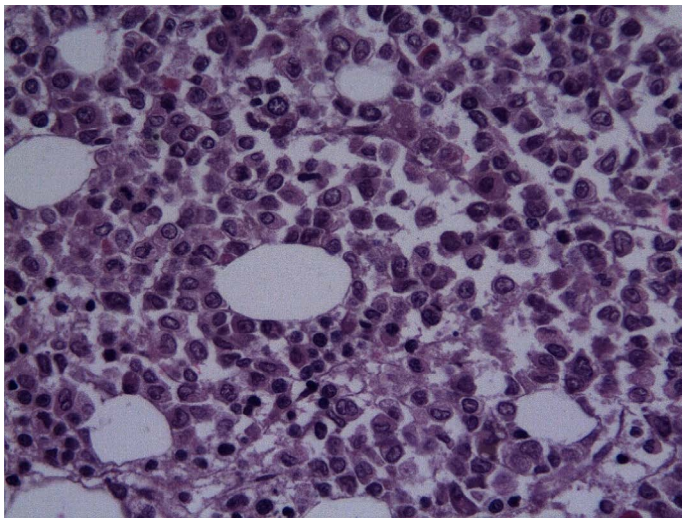

Figure 3. *The granulocytic lineage is represented by elements of the predominantly intermediate pool. Hematoxylin and eosin staining. Magnification 40x0.65.*

Based on the examination data obtained, a diagnosis was made: Myelodysplastic syndrome. Refractory anemia with excess blasts detected for the first time. High risk according IPSS. Against the background of ongoing hemocomponent replacement therapy, the patient's condition somewhat stabilized. In the UAC on December 1, 2018: hemoglobin - 78 g/l; erythrocytes - 1.56x1012/l; leukocytes - 7.32x 10⁹/l p/i - 2%, s/i - 12%; lymphocytes - 71%; monocytes - 10%, blasts - 5%, platelets - 71.4x109/l.

However, despite the blood transfusion therapy, anemic syndrome and thrombocytopenia continued to increase. Given the lack of remission, a repeat sternal puncture, cytogenetic examination of the bone marrow, and immunophenotyping of bone marrow cells were performed.

According to the myelogram dated December 24, 2018, the bone marrow punctate is cellular, polymorphic. Blastosis (64.0%). Blasts are medium and large in size with a high nuclear-cytoplasmic ratio. The nuclei are round and irregular in shape with a dispersed chromatin structure and well-contoured 2-3 nucleoli. The cytoplasm is moderately basophilic; some blasts contain azurophilic granulation. Erythropoiesis with a predominance of the normoblastic type of hematopoiesis with a small megaloblastoid component. The erythroid germ is preserved - 21.5%, represented by mature forms. The granulocytic lineage is reduced to 3.3%. MCCs are not present in the preparation.

According to a cytogenetic study of the bone marrow: karyotype 45-47XX, del(3)(p24),-4,?t(6;11),+8,-10,der(10) t(10;?),+del(12)(p12),t(13;?)(q10;?),?del(17)(p12),i(17)(q10),+21,+mar1,+mar2. Conclusion – complex changes in the karyotype involving different chromosomes.

Immunophenotyping revealed a population of tumor cells of 49.0% with the immunophenotype CD117+\CD33+\CD34+CD7+\HLADR+\cytMPO+\CD13-\CD11c-\CD64-\CD56-\CD11i-\CD14-\CD15-\cyt 79a -\cytCD3-This immunophenotype is characteristic of acute myeloid leukemia with coexpression of the CD7 lymphoid antigen.

Based on the studies conducted, the diagnosis was verified: Acute myeloblastic leukemia, first identified as an outcome of MDS. High risk group.

Due to the transformation of MDS into acute myeloblastic leukemia, monthly courses of treatment with decitabine (Dacogen) were started along with blood transfusion therapy.

In total, from December 2018 to June 2019, 6 courses of chemotherapy with Dacogen were carried out at a dose of 40 mg for 5 days every month. Only clinical improvement was achieved.

In the UAC dated June 17, 2019, hemoglobin was 87 g/l; erythrocytes - 3.0 x1012/l; leukocytes - 7.1x 10⁹/l, s/y - 87%; monocytes - 8%, blasts - 5%, platelets - 29x109/l. After the 6th course, resistance to dacogen was established and the patient continued therapy with cytosine arabinoside at a dose of 20 mg 2 times s.c. From July to November 2019, 4 courses of chemotherapy with low doses of cytosine arabinoside were carried out, which was complicated by bilateral bronchiolitis and a boil in the area of the tip of the nose.

Subsequent hospitalizations were due to increasing anemia (below 60 g/l) and thrombocytopenia (below 50.0x10 9/l) with the appearance of hemorrhagic syndrome. Treatment was carried out with transfusions of red blood cells and platelet concentrate, erythropoietin preparations and colony-stimulating factors, and antibiotics, the effect of which was short-lived. Blood transfusion dependence has developed. Despite the treatment, the progression of the disease continued with an increase in leukocytosis and blastosis.

The last hospitalization to the hematology department of the multidisciplinary city Hospital No. 1 in Astana was carried out on 01/09/2020 due to a deterioration in the patient's condition, when he began to experience pain in the epigastric region, vomiting, fever and severe weakness. In the UBC: hemoglobin - 53 g/l; erythrocytes - 2.08 $x10^{12}$/l; leukocytes -16.9 x 10⁹/l, blasts - 30%, s/i - 11%; monocytes - 4%, lymphocytes - 55% platelets - 2.0 x109/l.

Upon examination, the condition is extremely serious. The skin is pale, there is extensive ecchymosis in the area of the right elbow. In the lungs there is vesicular breathing, no wheezing. Heart sounds are weakened, the sound of mechanical valves is heard. Heart rate 98 beats/minute. Blood pressure 100/60 mm Hg. The abdomen is swollen, painful on palpation in the umbilical area. The liver protrudes from the hypochondrium by 3 cm. There was no stool for 3 days. There is a wound on the skin in the anus with purulent discharge.

Examined by a surgeon. Conclusion: acute subcutaneous dehiscent paraproctitis.

From the evening of 10.01. decrease in blood pressure to 90/60 mm. Hg st, tachycardia up to 115-126 per minute, fine rales are heard in the posterior lower parts of both lungs, respiratory rate

28 per minute. There are hemorrhages on the skin of the upper extremities and torso.

Despite the treatment, the condition progressively worsened. Skin-hemorrhagic syndrome increased, tachycardia reached 142 per minute, blood pressure decreased to 85/60 mm Hg, saturation was 82%. The ECG shows paroxysmal tachycardia with a heart rate of 182 beats per minute.

Due to increasing cardiovascular and respiratory failure, at 23-00 he was transferred to the intensive care unit, where the patient developed disseminated intravascular coagulation syndrome. According to coagulogram data: fibrinogen is not detected; APTT >120 sec; PT >120 sec; INR - no coagulation. Against the backdrop of intensive treatment, the patient's condition progressively worsened, a disruption of the heart rhythm with ventricular fibrillation occurred, therapeutic and resuscitation measures were unsuccessful, and the patient's death was declared.

Discussion.

Myelodysplastic syndrome (MDS) is a group of heterogeneous acquired clonal hematological tumors, united by a common origin from a hematopoietic stem cell with impaired differentiation of cells of one, two or three hematopoietic lineages. MDS is characterized by cytopenia, signs of dysmyelopoiesis and a high risk of transformation into acute myeloid leukemia (AML) [10,13,14]. In Europe and the USA, the incidence of MDS in the general population is 4-5 cases per 100,000 population per year, approximately the same in men and women. On average, approximately 25,000 new cases of MDS are diagnosed each year in the United States and Europe. MDS is extremely rare among young people. The main contingent (more than 80% of patients) are people over 60 years of age. At the age of over 60 years, the frequency increases to 20-50 cases per 100 thousand people per year. According to some authors, there are currently about 2.5 thousand patients with MDS in Russia. However, there is no centralized registration of patients with MDS, and the detection of the disease remains low. There are no statistical data on the incidence and prevalence of MDS in Kazakhstan. Considering the steady “aging” of the planet’s population, it is believed that the number of patients with MDS will only increase in the coming decades [4,6,9,13,15]. According to various authors, the risk of MDS developing into acute leukemia is 30% [1,5,7]. MDS is based on various genetic changes, as well as abnormal DNA methylation, leading to inhibition of the expression of tumor suppressor genes, which in turn leads to multiple disorders of the cell cycle and differentiation [1,2,11,13,16].

The course of MDS can vary from latent to aggressive, in which rapid transformation into AML occurs, so making clinical decisions regarding the timing of onset and methods of treatment for the disease is an important and at the same time quite complex process. The choice of therapy depends on many factors - the patient’s age, membership in a risk group, the presence and severity of concomitant pathology, the type of MDS, and the presence of an HLA-compatible donor. In addition, the problem of MDS therapy is the difficulty of applying a risk-adapted treatment strategy, since currently there is no universal prognostic scale that would include all parameters significant for MDS (morphological variant, splenomegaly, LDH, β2-microglobulin, ferritin, etc.) [10]. Since the average age at the time of diagnosis of MDS is about 70 years, such patients typically have comorbid and/or multimorbid pathology, which affects the results and approaches to treatment [8,15].

The difficulty of diagnosing MDS is due to the fact that the main clinical manifestations of the disease are nonspecific and are most often caused by both quantitative and qualitative changes in the hematopoietic system. The main manifestations of MDS are represented by cytopenic syndrome: anemia, thrombocytopenia and leukopenia, infectious complications, splenomegaly, autoimmune manifestations and/or B-symptoms (weight loss, low-grade fever in the evening, sweating, bone pain). Anemic syndrome occurs in 80-90% of cases and is characterized by varying degrees of severity of symptoms such as dizziness, palpitations, shortness of breath during exercise, and general weakness. Hemorrhagic syndrome due to thrombocytopenia is observed in 25-70% of cases and is manifested by such symptoms as petechiae on the skin and mucous membranes, nasal, gingival, uterine, renal and gastrointestinal bleeding, hemorrhages in the sclera of the eyes and brain.

The pathogenesis of infectious complications is caused by neutropenia and granulocyte dysfunction. Autoimmune manifestations occur in 10% of patients, manifesting clinically as systemic vasculitis, reactive arthritis, polymyalgia rheumatica, autoimmune hemolytic anemia, pericarditis and pleurisy [4,7,8].

Myelodysplastic syndrome is an irreversible tumor process with a clear tendency to transform into acute leukemia. The diagnosis of MDS is always made with caution by excluding other diseases accompanied by cytopenia. To make a diagnosis, not only routine hematological examination methods are required, but also a mandatory cytogenetic study of the bone marrow. The disease can proceed either more favourably with a sufficient life expectancy, but also more malignantly, quickly transforming into acute myeloid leukemia.

The choice of treatment tactics for MDS with such a varied course of the disease is carried out on the basis of a risk-adapted approach, using prognostic scales - IPSS, IPSS-R, WPSS. In the treatment of MDS, taking into account the characteristics of the pathogenesis and heterogeneity of the disease, the most effective and recognized throughout the world are symptomatic, cytostatic, epigenetic, immunosuppressive and immunomodulatory therapy, allogeneic hematopoietic stem cell transplantation [4,11].

The clinical case we presented demonstrates that in the early stages of the disease, when the patients’ complaints are not very specific and are caused by anemia and/or infectious complications, as well as thrombocytopenia, doctors regard such patients as suffering from anemia of chronic diseases, since in the age group over 60 years, as a rule, there is a concomitant somatic pathology. Therefore, treatment is symptomatic: red blood cells, erythropoietins, vitamin B12, folic acid, sometimes iron supplements and antibiotics.

The disease proceeds relatively favourably as long as the leukemic clones in MDS are in a torpid state and do not progress to acute leukemia. Moreover, due to numerous complications, some patients with MDS die from infections or various hemorrhagic complications before reaching the period

of formation of acute leukemia. In this regard, the management of patients with MDS is still an unresolved problem. To stratify the prognosis for MDS, formulate a diagnosis and select a therapeutic approach, the IPSS – International Prognostic Scoring System is used, which evaluates the percentage of blast cells in the bone marrow, the cytogenetic profile of the tumor, and the number of cytopenias [1,12,14,16]. The approach to the treatment of MDS should be individualized and based on the patient's risk group, age, and somatic status. The complexity of diagnosing and managing a patient with MDS is illustrated in the clinical case.

Conclusion.

In our spleectomized patient with mitral and aortic valve prostheses, as well as a malignant course of the MDS, hematopoietic stem cell transplantation was not planned. The leukemic clone was uncontrollable and difficult to respond to immunosuppressive, immunomodulatory and epigenetic therapy, which ultimately contributed to the rapid transformation of MDS into AML. It is clear that the most effective treatment for MDS, allowing 40% of patients to achieve five-year survival, is allogeneic hematopoietic stem cell transplantation. However, the lack of related compatible donors and, most often, the elderly age of patients with comorbid somatic pathology significantly limit the possibilities of carrying out this treatment method.

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Резюме

Трансформация миелодиспластического синдрома в острый миелобластный лейкоз (клинический случай)

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Миелодиспластический синдром (МДС) - необратимый опухолевый процесс с отчетливой тенденцией к трансформации в острый лейкоз.

В статье представлен клинический случай трансформации МДС в острый миелобластный лейкоз у спленэктомированного пациента относительно молодого возраста с протезированными аортальным и митральным клапанами, у которого несмотря на доступность проведения современных методов диагностики и лечения прогноз оказался плохо предсказуем. Учитывая агрессивное течение МДС трансплантация гемопоэтических стволовых клеток не планировалось.

Диагноз МДС всегда ставится с осторожностью, исключая другие заболевания, сопровождающиеся цитопенией. Для верификации диагноза МДС необходимы не только рутинные гематологические методы исследования, но и обязательное цитогенетическое исследование костного мозга. Подход к лечению МДС должен быть индивидуализированным и основываться на группе риска, возрасте и соматическом статусе пациента.

Ключевые слова: миелодиспластический синдром, острый миелобластный лейкоз.

Summary

TRANSFORMATION OF MYELODYSPLASTIC SYNDROME INTO ACUTE MYELOBLASTIC LEUKEMIA (CLINICAL CASE)

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Myelodysplastic syndrome (MDS) is an irreversible tumor process with a clear tendency to transform into acute leukemia.

The article presents a clinical case of transformation of MDS into acute myeloblastic leukemia in a splenectomized relatively young patient with prosthetic aortic and mitral valves, in whom, despite the availability of modern diagnostic and treatment methods, the prognosis turned out to be poorly predictable. Given the aggressive course of MDS, hematopoietic stem cell transplantation was not planned.

The diagnosis of MDS is always made with caution, excluding other diseases accompanied by cytopenia. To verify the diagnosis of MDS, not only routine hematological research methods are required, but also a mandatory cytogenetic study of the bone marrow. The approach to the treatment of MDS should be individualized and based on the risk group, age and somatic status of the patient.

Key words: Myelodysplastic syndrome, acute myeloblastic leukemia.

მიელოდისპლასტიკური სინდრომი არის შეუქცევადი სიმსივნური პროცესი მწვავე ლეიკემიად გარდაქმნის აშკარა ტენდენციით.

სტატიაში წარმოდგენილია MDS-ის მწვავე მიელობლასტურ ლეიკემიად ტრანსფორმაციის კლინიკური შემთხვევა სპლენექტომიურ შედარებით ახალგაზრდა პაციენტში პროთეზირებული აორტის და მიტრალური სარქვლებით, რომელშიც, მიუხედავად თანამედროვე დიაგნოსტიკური და მკურნალობის მეთოდების ხელმისაწვდომობისა, პროგნოზი ცუდად პროგნოზირებადი აღმოჩნდა. MDS-ის აგრესიული კურსის გათვალისწინებით, ჰემატოპოეზური ღეროვანი უჯრედების ტრანსპლანტაცია არ იყო დაგეგმილი. მიელოდისპლასტიკური სინდრომის დიაგნოზი ყოველთვის სიფრთხილით დგება, ციტოპენიის თანმხლები სხვა დაავადებების გამოკლებით. MDS-ის დიაგნოზის დასადასტურებლად საჭიროა არა მხოლოდ რუტინული ჰემატოლოგიური კვლევის მეთოდები, არამედ ძვლის ტვინის სავალდებულო ციტოგენეტიკური შესწავლა.

MDS-ის მკურნალობისადმი მიდგომა უნდა იყოს ინდივიდუალური და ეფუძნება პაციენტის რისკჯგუფს, ასაკს და სომატურ სტატუსს.

საკვანძო სიტყვები: მიელოდისპლასტიკური სინდრომი, მწვავე მიელობლასტური ლეიკემია.

ემაჯამებელი

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