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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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HODGKIN LYMPHOMA DIAGNOSED DURING THE SECOND TRIMESTER OF PREGNANCY AND TREATED WITH ABVD CHEMOTHERAPY WITH FAVORABLE MATERNAL AND NEONATAL OUTCOMES: A CASE REPORT

Ghukasyan Norayr[1]*, Melik-Andreasyan Marine[2], Sahakyan Lusine[2].

[1]*Erebouni Medical center, Yerevan, Armenia.*

[2]*Yeolyan Hematology and Oncology center, Yerevan, Armenia.*

Abstract.

Background: Hodgkin lymphoma (HL) during pregnancy is rare and presents diagnostic and therapeutic challenges. Optimal management requires balancing maternal oncologic benefit and fetal safety through a multidisciplinary approach.

Case presentation: A 25-year-old Armenian woman presented at 26 weeks' gestation with fatigue, night sweats, and significant weight loss. Magnetic resonance imaging without contrast revealed an anterior mediastinal mass. Histopathology confirmed classical Hodgkin lymphoma, nodular sclerosis subtype. Following multidisciplinary discussion, antenatal chemotherapy with the ABVD regimen was initiated. Two cycles were administered during pregnancy with close maternal and fetal monitoring. Pregnancy progressed uneventfully to 37 weeks, when a planned cesarean section was performed. A healthy male neonate was delivered with good Apgar scores. Postpartum, the mother completed chemotherapy and achieved complete remission.

Conclusions: This case demonstrates that Hodgkin lymphoma diagnosed during the second trimester can be safely treated with ABVD chemotherapy during pregnancy when managed by a multidisciplinary team, resulting in favorable maternal and neonatal outcomes.

Key words. Hodgkin lymphoma, pregnancy, ABVD chemotherapy, multidisciplinary care, case report.

Introduction.

Cancer complicates approximately 1 in 1,000 pregnancies and represents a leading cause of non-obstetric maternal morbidity [1]. Hodgkin lymphoma is among the most common hematologic malignancies diagnosed in women of reproductive age. Pregnancy-associated HL poses unique challenges, as pregnancy-related physiological changes may delay diagnosis, and treatment decisions must account for fetal safety.

Current evidence supports the administration of selected chemotherapy regimens during the second and third trimesters, when organogenesis is complete, without significantly increasing the risk of congenital malformations [2,3]. The ABVD regimen remains the standard first-line therapy for classical HL and is considered acceptable during later stages of pregnancy [4]. This report describes a successfully managed case from Armenia, emphasizing the role of multidisciplinary care.

Case presentation.

A 25-year-old Armenian woman, gravida 2 para 1, at 26 weeks' gestation presented with a two-month history of progressive fatigue, night sweats, and unintentional weight loss of approximately 7 kg. She denied fever. Her medical history was unremarkable, and her previous pregnancy had been uncomplicated.

Physical examination revealed multiple enlarged, firm, non-tender lymph nodes in the left supraclavicular region, up to 2.5 cm in diameter, and a palpable anterior wall nodal mass. Vital signs were stable. Obstetric examination demonstrated a normally progressing singleton pregnancy with reassuring fetal heart rate.

Investigations.

Laboratory evaluation showed mild normocytic anemia (hemoglobin 10.4 g/dL), normal leukocyte and platelet counts, and elevated lactate dehydrogenase (612 U/L). Liver and renal function tests were within normal limits.

Magnetic resonance imaging of the chest without gadolinium contrast revealed an anterior mediastinal mass measuring 8.2 × 6.1 × 4.8 cm, causing mild compression of adjacent structures without pleural effusion. The mass was classified as "bulky" based on the criterion that its maximum transverse diameter (8.2 cm) exceeded one-third of the internal thoracic diameter (21 cm at the same axial level), consistent with standard radiological definitions. Abdominal ultrasound showed no hepatosplenomegaly.

An excisional biopsy of a supraclavicular lymph node confirmed classical Hodgkin lymphoma, nodular sclerosis subtype. Immunohistochemistry demonstrated CD30-positive, CD15-positive, weak PAX5-positive, and CD20-negative tumor cells. The disease was staged as Ann Arbor stage IIB (presence of B symptoms: night sweats and weight loss).

Differential diagnosis.

The differential diagnosis included reactive lymphadenopathy, tuberculosis, non-Hodgkin lymphoma, sarcoidosis, and metastatic malignancy. Histopathological findings confirmed classical Hodgkin lymphoma.

Treatment.

The case was reviewed by a multidisciplinary team including a hematologist, obstetrician-gynecologist, anesthesiologist, and neonatologist. Given the presence of B symptoms and bulky disease (defined as mediastinal mass with transverse diameter >1/3 of internal thoracic diameter), antenatal chemotherapy was recommended.

Chemotherapy with the ABVD regimen was initiated at 27 weeks' gestation. Standard doses were administered: doxorubicin 25 mg/m², bleomycin 10 IU/m², vinblastine 6 mg/m², and dacarbazine 375 mg/m² on days 1 and 15 of a 28-day cycle. Two cycles were completed during pregnancy. Treatment was well tolerated, with no episodes of febrile neutropenia or pulmonary toxicity.

Timeline of events during pregnancy:

- At 27 weeks' gestation, the first cycle of ABVD was initiated.
- Each 28-day cycle consisted of two doses (days 1 and 15).
- The first cycle was completed at 31 weeks, and the second cycle was started immediately thereafter.
- The second and final antenatal cycle was completed at 35 weeks' gestation.
- At 37 weeks, a planned Cesarean section was performed, and a healthy neonate was delivered.

Fetal monitoring.

Fetal surveillance included ultrasound biometry and Doppler studies every 3–4 weeks, and weekly cardiotocography from 32 weeks' gestation as part of standard antenatal surveillance for late preterm pregnancy. Fetal growth remained appropriate for gestational age, and no signs of distress were detected.

Outcome and follow-up.

The last antenatal ABVD cycle was administered at 35 weeks' gestation. Preoperative complete blood count showed hemoglobin 11.2 g/dL, white blood cells 4.8×10^9/L, neutrophils 2.1×10^9/L, and platelets 210×10^9/L, with no evidence of cytopenia.

Pregnancy progressed to 37 weeks' gestation. A planned Cesarean section was performed at 37 weeks' gestation. The decision was based on several considerations: (1) to allow coordinated scheduling between the obstetric and oncology teams, enabling immediate postpartum continuation of chemotherapy; (2) to minimize the risk of unplanned spontaneous labor occurring during a potential chemotherapy-induced nadir period (although the preoperative blood count showed no cytopenia, the timing of labor is unpredictable); (3) to avoid potential bleeding complications associated with vaginal delivery in a patient with recent chemotherapy exposure; and (4) to ensure optimal peripartum management in a tertiary care setting. While preoperative blood counts were reassuring (hemoglobin 11.2 g/dL, platelets 210×10^9/L, neutrophils 2.1×10^9/L), the decision was primarily driven by oncologic and organizational factors rather than documented cytopenia.

A male neonate weighing 2,980 g was delivered with Apgar scores of 8 and 9 at 1 and 5 minutes, respectively. No neonatal intensive care was required.

Postpartum, the patient completed four additional cycles of ABVD chemotherapy. At six-month follow-up, she achieved complete clinical remission. The infant demonstrated normal growth and neurodevelopment based on a comprehensive pediatric clinical assessment (including physical examination and age-appropriate developmental milestone screening) at the six-month follow-up visit.

Discussion.

Hodgkin lymphoma (HL) diagnosed during pregnancy is rare, with an estimated incidence of approximately 1 in 1,000 to 1 in 6,000 pregnancies. Its management presents unique challenges, as physiological changes of pregnancy may mask or delay diagnosis, and treatment decisions must carefully balance maternal oncologic benefit against fetal safety.

Safety of ABVD chemotherapy during pregnancy.

Several studies have demonstrated that ABVD chemotherapy can be safely administered during the second and third trimesters of pregnancy with acceptable maternal and fetal outcomes [2,5,6]. The safety profile of individual ABVD components during pregnancy is well documented. Doxorubicin has a high molecular weight (>500 Da), which limits placental transfer; its use after the first trimester is not associated with an increased risk of congenital malformations or long-term cardiac toxicity in offspring. Bleomycin carries a risk of maternal pulmonary toxicity but is not considered teratogenic; careful monitoring for pulmonary symptoms is recommended. Vinblastine has been used extensively in pregnant patients with HL without documented fetal harm. Dacarbazine has more limited published experience, but its combination within the ABVD regimen has been shown to be feasible during late pregnancy [2,3].

The mechanisms by which second- and third-trimester foetuses escape the adverse effects of these agents are related to: (1) improved placental barrier function after organogenesis (first trimester) is complete; (2) the ability of the fetal liver and kidney to metabolize and excrete low levels of transferred drugs; and (3) the absence of major organ development during later gestation, which reduces the risk of structural anomalies [3].

What this case adds to the literature.

Although the overall safety of ABVD during the second and third trimesters is already established, the present case adds several novel elements.

First, to the best of our knowledge, this is one of the few reported cases where the diagnosis was made precisely at the transition between the second and third trimester (27 weeks), and chemotherapy was initiated immediately without delay.

Second, we provide a detailed week-by-week timeline of each ABVD cycle in relation to gestational age, which may serve as a practical reference for clinicians.

Third, we report not only favorable maternal and neonatal outcomes at birth but also normal infant development at six months of follow-up and complete maternal remission.

Diagnostic imaging during pregnancy.

MRI without gadolinium contrast is the preferred imaging modality for staging lymphoma during pregnancy, as it avoids ionizing radiation exposure to the fetus [1,7]. In our case, MRI confirmed a bulky mediastinal mass without evidence of distant spread, allowing accurate staging (Ann Arbor IIB) and guiding treatment decisions.

Fetal monitoring during antenatal chemotherapy.

Fetal surveillance included ultrasound biometry and Doppler velocimetry of the uterine and umbilical arteries performed every 3–4 weeks. Fetal growth remained appropriate for gestational age, and no signs of distress were detected on ultrasound.

Although fetal growth parameters and Doppler studies remained within normal limits throughout the chemotherapy period, weekly cardiotocography (CTG) was performed as part of our institutional protocol for high-risk pregnancies in the context of maternal malignancy. This approach is supported by clinical guidelines, which recommend intensified fetal

surveillance in pregnant women receiving chemotherapy due to the potential, albeit low, risk of placental insufficiency, fetal distress, or impaired fetal growth [1,7]. CTG monitoring allowed early detection of any fetal compromise, despite reassuring ultrasound findings. In this case, all CTG tracings remained reactive and reassuring until delivery.

Timing of delivery and perioperative management.

The timing of delivery in pregnant patients receiving chemotherapy must balance fetal maturity with maternal oncologic safety. In our case, the last antenatal ABVD cycle was administered at 35 weeks' gestation, and a planned cesarean section was performed at 37 weeks. This allowed a two-week washout period, which is generally recommended to avoid postoperative bleeding and to ensure adequate maternal neutrophil recovery (absolute neutrophil count >1.5 × 10^9/L). Our patient's preoperative complete blood count confirmed no evidence of cytopenia.

Cesarean section was chosen over vaginal delivery for several reasons: to allow better coordination with ongoing oncologic treatment, to minimize the risk of unplanned labor during chemotherapy-induced cytopenias, and to ensure optimal peripartum management of the mother. This approach is consistent with published recommendations, although vaginal delivery may be considered in selected low-risk cases when delivery is not expected to coincide with chemotherapy-induced nadir periods.

Maternal and neonatal outcomes.

Our patient achieved complete remission after completing four additional cycles of ABVD postpartum, and the infant demonstrated normal growth and neurodevelopment at six months of follow-up. These outcomes align with existing literature, which reports favorable long-term prognosis for both mothers and children when HL is managed appropriately during pregnancy [5,6].

Limitations.

This case report has several limitations inherent to its design. First, it describes a single patient, which limits generalizability. Second, long-term follow-up of the child is currently limited to six months; ongoing surveillance for potential late effects of in-utero chemotherapy exposure (e.g., cardiac function, neurocognitive development) is warranted. Third, MRI and histopathology images are not included in this report due to institutional data privacy policies that restrict the publication of identifiable diagnostic images without explicit patient consent for image publication. While the patient provided consent for the case report, specific consent for image publication was not obtained. The diagnosis is confirmed by detailed immunohistochemistry.

Comparison with existing evidence.

Our case adds to the growing body of evidence that effective oncologic treatment during pregnancy is feasible and should not automatically necessitate pregnancy termination when managed by a multidisciplinary team [2,4,6]. The successful outcome in this patient supports existing recommendations that ABVD chemotherapy can be safely administered during the second and third trimesters of pregnancy.

Conclusion.

Hodgkin lymphoma diagnosed during the second trimester of pregnancy can be successfully treated with antenatal ABVD chemotherapy followed by planned delivery. Multidisciplinary management — involving hematologists, obstetricians, anesthesiologists, and neonatologists — is crucial for achieving favorable maternal and neonatal outcomes.

Declarations.

Patient consent: Written informed consent was obtained from the patient.

Ethical Approval and Consent to participate: Not required for a single anonymized case report.

Data Availability: All data generated or analyzed during this study are included in this published article.

Consent for publication: Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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List of abbreviations:

ABVD: Doxorubicin (Adriamycin), Bleomycin, Vinblastine, Dacarbazine
HL: Hodgkin lymphoma
MRI: Magnetic resonance imaging
B symptoms: Fever, night sweats, weight loss
IU: International units
mg: Milligram
m^2: Body surface area in square meters
g/dL: Grams per deciliter
U/L: Units per liter
cm: Centimeter
kg: Kilogram.

Patient perspective.

When I was diagnosed with lymphoma during my pregnancy, I was very scared for both myself and my baby. But the doctors explained everything clearly and told me that treatment could be given safely without harming the baby. I agreed to start chemotherapy. During the treatment, I was monitored very closely. The doctors checked my baby every week. I was worried about side effects, but I tolerated the chemotherapy well. I was very happy when my baby was born healthy. Now, six months later, my baby is growing normally, and I am in remission. I am very grateful to the medical team.

REFERENCES

1. Amant F. Cancer in pregnancy. N Engl J Med. 2012;366:1813-1825.
2. Azim HA Jr. Safety of chemotherapy during pregnancy. Lancet Oncol. 2012;13:e160-e170.
3. Cardonick E, Iacobucci A. Use of chemotherapy during pregnancy. Lancet Oncol. 2004;5:283-291.
4. Eichenauer DA, Aleman B.M.P, Andre M, et al. Hodgkin lymphoma: ESMO Guidelines. Ann Oncol. 2018;29:iv19-iv29.
5. Avilés A, Neri N. Hodgkin lymphoma and pregnancy. Cancer. 2011;117:4896-4903.
6. Van Calsteren K, Heyns L, De Smet F, et al. Cancer during pregnancy. Lancet. 2010;376:558-567.
7. Peccatori FA, Azim Jr HA, Orecchia R, et al. Cancer, pregnancy and fertility: ESMO Guidelines. Ann Oncol. 2013;24:vi160-vi170.