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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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ETHICAL AND DEONTOLOGICAL DIMENSIONS OF RETINOPATHY OF PREMATURITY CARE: TOWARD A EUROPEAN PERSPECTIVE

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Abstract.

Background: Retinopathy of prematurity (ROP) is a retinal vasoproliferative disorder affecting preterm infants and remains a leading cause of preventable childhood blindness worldwide. In Albania, challenges in ROP management are amplified by limited infrastructure, absence of structured screening programs, and low awareness among health care providers and families.

Objectives: To examine the clinical, ethical, and deontological challenges in diagnosing and managing ROP in Albania and to highlight strategies for improving patient outcomes.

Methods: This study employed a narrative review and ethical-legal analysis of retinopathy of prematurity (ROP) management in Albania and in other countries. Relevant literature was identified in Medline/PubMed, Scopus and Google Scholar. Particular emphasis was placed on recent epidemiological and clinical studies evaluating the incidence and management of ROP in neonatal intensive care units. International guidelines from the American Academy of Pediatrics (AAP), the American Academy of Ophthalmology (AAO), and the World Health Organization (WHO) were also reviewed.

Discussion: Delayed diagnosis, insufficient trained pediatric ophthalmologists, limited access to diagnostic and therapeutic tools, and inconsistent follow-up constitute major clinical challenges. Ethical concerns and de-ontological issues include professional responsibility, transparency in communication, patient dignity, inter-disciplinary collaboration, and institutional accountability.

Conclusions: ROP in Albania and other European countries presents a multidimensional challenge requiring coordinated clinical, ethical, and institutional responses. Establishing national screening protocols, enhancing specialist training, ensuring equitable access to therapies, and adopting structured ethical guidelines are essential to prevent ROP-related blindness and optimize outcomes for preterm infants.

Key words. Retinopathy of prematurity, neonatal ethics, bioethics.

Introduction.

Retinopathy of prematurity (ROP) is a condition whose screening, follow-up, and treatment represent a fundamental intersection between clinical medicine and bioethics. It affects preterm infants, whose retinal vasculature is incompletely developed, potentially resulting in pathological neovascularization and irreversible visual impairment or blindness [1]. With improvements in neonatal survival in Albania, the number of infants at risk of ROP has increased, but national screening and follow-up systems remain insufficiently structured and inconsistently implemented.

ROP management raises not only clinical concerns but also important ethical and deontological issues. Decisions concerning screening, treatment modalities, parental consent, follow-up, and allocation of healthcare resources require a delicate balance between medical judgment and moral responsibility. Medical liability in the management of ROP involves balancing the physician's duty of care with the parents' responsibility to cooperate with recommended screening, treatment, and follow-up protocols [2,3]. From a medico-legal perspective, two principal issues can be distinguished: negligence and the allocation of legal responsibility between the parties, including contributory and comparative negligence, as well as specific forms of medical malpractice that may occur during the provision of care [4,5].

Contributory and Comparative Negligence in ROP Management:

Contributory negligence arises when the injured party contributes to the harm by failing to follow medical advice, delaying scheduled examinations, or refusing recommended treatment [5]. Comparative negligence, in contrast, seeks to apportion responsibility between the parties according to their respective degrees of fault [4]. In the context of ROP, such considerations may include assessing medical records, communicating with parents or caregivers, documenting informed consent, and adhering to established screening and referral protocols.

Negligence in ROP management may be conceptualized in several forms:

Negligence by omission, including failure to establish appropriate screening procedures or failure to provide adequate information to parents and caregivers [6].

Technical negligence, including errors in examination, disease staging, or treatment procedures [7].

Communicative and organizational negligence, including inadequate coordination between healthcare professionals, insufficient documentation, or delayed referral for treatment [8].

The legal consequences of negligent care depend on the specific circumstances, the applicable legal framework, the degree of deviation from the expected standard of care, and the resulting harm. In Albania, relevant provisions of the Criminal Code may apply in circumstances involving serious injury or other legally defined consequences, although the determination of criminal responsibility requires a case-specific legal assessment [9]. Medical malpractice should therefore be distinguished from recognized complications of treatment or unfavorable outcomes that occur despite appropriate care [10].

Even in high-income countries such as the United States, ROP remains an important cause of childhood visual impairment and

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blindness [11]. Concerns regarding medicolegal risk, prolonged liability periods, and inadequate institutional protection may discourage ophthalmologists from participating in ROP screening and treatment. These challenges underscore the importance of structured follow-up systems, standardized documentation, and digital retinal imaging. Telemedicine and wide-field imaging systems can improve diagnostic documentation and facilitate specialist assessment while contributing to continuity, accountability, and quality of care [12-14].

This article explores the interrelated clinical, ethical, deontological, and legal dimensions of ROP management within the Albanian healthcare system. It identifies major gaps in current practice and proposes strategies for improving screening, continuity of care, professional accountability, and equitable access to treatment.

Materials and Methods.

This study employed a narrative review and interdisciplinary ethical and medico-legal analysis of ROP management in Albania and other European countries. The relevant literature was identified through PubMed, Scopus, Google Scholar, and institutional publications, covering the period from 2000 to 2025.

The search strategy included combinations of the terms "retinopathy of prematurity," "neonatal ethics," "medical negligence," "bioethics," "medical malpractice," and "Albania." Particular emphasis was placed on the Albanian epidemiological and clinical literature addressing ROP and neonatal intensive care, as well as the international literature addressing the ethical, legal, and clinical dimensions of ROP management.

Relevant publications concerning informed consent, professional responsibility, negligence, medical liability, equity in healthcare, and neonatal ethics were also considered. International recommendations and guidance relevant to ROP screening and neonatal care were reviewed where applicable.

The analysis was qualitative and narrative in nature. The available evidence was synthesized according to four main domains: clinical challenges, ethical considerations, deontological responsibilities, and medico-legal implications.

Results and Discussion.

The literature reviewed consistently identifies retinopathy of prematurity (ROP) as a multifactorial clinical and public health challenge in which patient outcomes are influenced not only by disease severity but also by healthcare organization, ethical practice, professional standards, and continuity of care.

Clinical Context and Challenges:

Neonatal intensive care units (NICUs) in Albania have contributed to improved survival among preterm infants, thereby increasing the population requiring systematic ROP surveillance [15]. However, ROP detection depends on access to appropriately trained ophthalmologists and suitable diagnostic equipment. The concentration of specialized ophthalmologic services in a limited number of tertiary centers may create difficulties for infants born or cared for in regional facilities.

Limited access to trained personnel and retinal imaging systems can contribute to delayed or missed diagnoses. Similarly, access to standard treatments, including laser photocoagulation and intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy, may be concentrated in urban or tertiary centers. Geographic and logistical barriers may therefore contribute to inequities in access to care. Inadequate follow-up systems may also increase the risk of treatment interruption or loss to follow-up, while fragmented care across public and private sectors may create additional challenges for continuity and quality assurance [16].

Ethical Dimensions in ROP Management:

The complexity of ROP and the vulnerability of preterm infants necessitate thorough and compassionate communication with families. Informed consent should extend beyond obtaining procedural authorization and should include meaningful communication regarding the purpose of treatment, potential benefits and risks, available alternatives, uncertainties, and possible long-term implications [17,18].

Clinicians working in NICU environments frequently face time constraints, emotional stress, and difficult clinical decisions. Nevertheless, ethical care requires transparent and empathetic communication, interdisciplinary collaboration, institutional support, and appropriate professional training [19]. Parents and caregivers should be given sufficient opportunities to ask questions and participate in decisions concerning the child's care.

Anti-VEGF therapy has substantially changed the therapeutic approach to ROP, particularly in severe disease. However, concerns remain regarding the systemic effects of treatment and the potential long-term consequences of VEGF suppression during a critical period of infant development [20]. Clinicians must therefore balance the immediate benefit of preventing severe visual impairment against uncertainty regarding long-term outcomes. This approach reflects the ethical principles of beneficence and non-maleficence while maintaining the infant's best interests as the central consideration [3].

Equity is another fundamental ethical concern. Every infant, irrespective of socioeconomic or geographic circumstances, should have an equitable opportunity to receive appropriate screening and treatment. Ethical healthcare, therefore, requires not only the availability of services but also reasonable accessibility, free of avoidable financial, geographic, or logistical barriers [21].

Deontological Perspectives:

From a deontological perspective, physicians have an obligation to maintain professional competence and provide care consistent with accepted standards of practice [22]. Continuous professional education in neonatal ophthalmology is therefore not merely desirable but also an integral part of the physician's professional responsibility. Failure to remain informed about evolving evidence, technologies, and clinical recommendations may compromise the physician's duty to patients [23].

Deontological ethics also emphasize the importance of truthfulness and respect for persons. When clinical outcomes are uncertain, or the prognosis is poor, clinicians should communicate honestly while maintaining compassion and sensitivity [3,23]. Concealing uncertainty or providing misleading reassurance may undermine patient and family trust and compromise professional integrity.

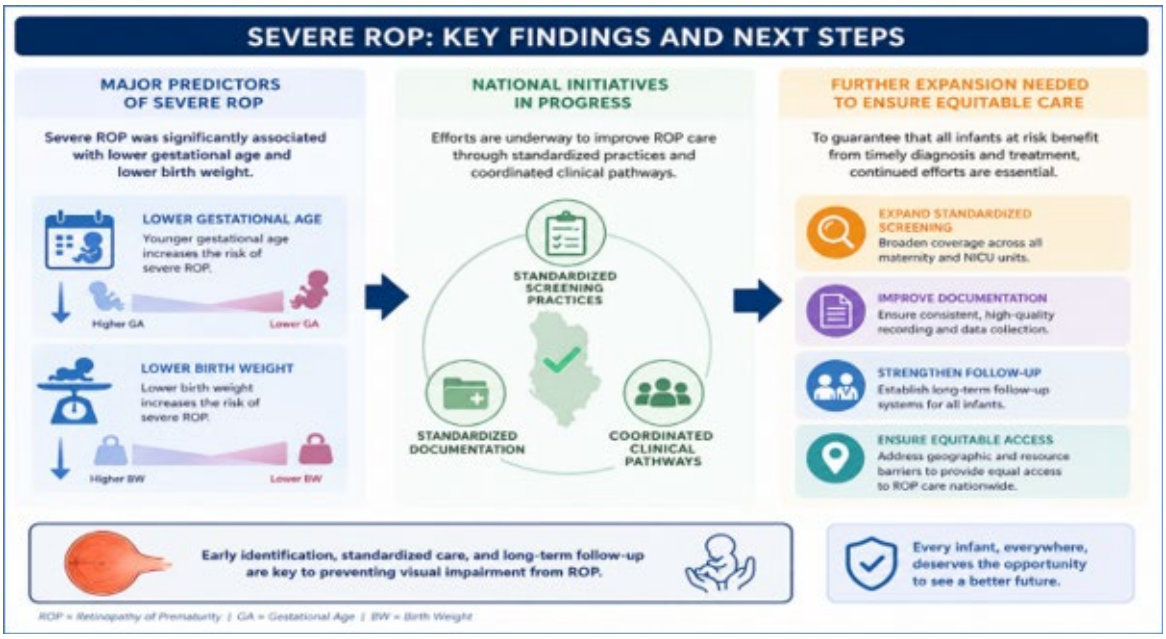


Figure 1. *Severe ROP: Key findings and next steps.*

Table 1. *The first nationwide observational study of ROP reported that, among 173 preterm infants meeting international screening criteria, 65 (37.6%) developed ROP and 12 (6.9%) progressed to stage 3 or more advanced disease requiring consideration of treatment.*

ROP Outcome	Number of Infants (n)	Percentage (%)
Preterm infants meeting international screening criteria	173	100
Infants who developed ROP	65	37.6
Infants with stage 3 or more advanced ROP requiring consideration of treatment	12	6.9
Infants without reported ROP	108	62.4

Table 2. *Within the Albanian healthcare system, continued development of standardized screening protocols, comprehensive documentation, structured follow-up systems, and multidisciplinary clinical governance will be essential to improve patient safety, strengthen professional accountability, and reduce medico-legal risk as national ROP services continue to evolve.*

Key Areas	Recommended Development	Expected Benefit
Screening protocols	Develop and implement standardized national ROP screening protocols	Consistent and timely identification of infants at risk
Documentation	Establish comprehensive and standardized clinical documentation	Improved continuity of care and professional accountability
Follow-up systems	Create structured systems for monitoring and follow-up of screened infants	Reduced risk of missed or delayed treatment
Multidisciplinary clinical governance	Strengthen collaboration among neonatologists, ophthalmologists, nurses, and other relevant professionals	Improved coordination, decision-making, and patient safety
Professional accountability	Define clear roles, responsibilities, and escalation pathways	Greater clarity in clinical responsibility and decision-making
Medico-legal risk management	Maintain robust protocols, documentation, and follow-up processes	Reduction of preventable errors and medico-legal risk
National ROP service development	Integrate these measures as ROP services continue to expand nationally	More consistent, safe, and sustainable ROP care across Albania

The ethical responsibility for high-quality ROP care extends beyond individual clinicians. Hospitals and healthcare authorities have a collective responsibility to establish systems that support ethical clinical practice. These systems should promote interdisciplinary collaboration, appropriate documentation, transparent reporting, professional education, and mechanisms for addressing ethical concerns and adverse events [24,25].

Clinical findings:

Across the reviewed studies, delayed or incomplete screening of eligible preterm infants emerged as the most frequently reported clinical challenge. The principal contributing factors included the absence of standardized national screening programs, inconsistent implementation of international screening recommendations, shortages of trained pediatric ophthalmologists, and limited access to specialized retinal imaging technologies.

A second recurring finding was unequal access to specialized ophthalmic care. In many resource-constrained healthcare systems, including Albania, ROP services remain concentrated in tertiary referral centers, while peripheral hospitals often lack personnel with expertise in neonatal retinal examination.

Consequently, delays in referral and treatment may occur, increasing the risk of disease progression before specialist assessment.

The literature also highlights the growing role of wide-field retinal imaging and tele-ophthalmology in improving diagnostic consistency, facilitating expert consultation, and strengthening documentation. However, these technologies remain unavailable or only partially implemented in many middle-income healthcare systems.

Loss to follow-up after hospital discharge was identified as another major contributor to adverse outcomes. Geographic barriers, socioeconomic constraints, inadequate parental understanding of the disease, and insufficient coordination between neonatal and ophthalmology services were consistently associated with delayed reassessment and reduced adherence to recommended surveillance schedules.

In Albania, ROP care is currently delivered primarily through tertiary neonatal centers. The first nationwide observational study of ROP reported that, among 173 preterm infants meeting international screening criteria, 65 (37.6%) developed ROP and 12 (6.9%) progressed to stage 3 or more advanced disease requiring consideration of treatment [4]. Severe ROP was significantly associated with lower gestational age and lower birth weight, consistent with international evidence identifying these variables as the principal predictors of disease severity. Although national initiatives to standardize screening practices and establish coordinated clinical pathways are underway, further expansion of standardized screening, documentation, and long-term follow-up remains necessary to ensure equitable access to care throughout the country.

Ethical findings:

The literature consistently identifies informed parental decision-making as a central ethical component of ROP management. Effective informed consent extends beyond obtaining formal authorization and requires that parents receive clear, accurate, and comprehensible information regarding disease severity, treatment alternatives, potential risks, expected outcomes, and the importance of strict adherence to follow-up schedules.

Equitable access to screening and treatment also emerged as a major ethical concern. Infants born outside tertiary referral centers or residing in geographically remote areas may experience delays in diagnosis and treatment, raising issues related to distributive justice and equal access to specialized healthcare.

The introduction of intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy has added further ethical complexity. Although anti-VEGF agents have become an established therapeutic option for selected cases of severe ROP, uncertainty regarding their long-term systemic effects in premature infants underscores the importance of individualized risk-benefit assessment and shared decision-making with caregivers.

Within the Albanian healthcare context, strengthening structured parental counselling and standardized communication practices may improve understanding of the disease, enhance adherence to follow-up recommendations, and reinforce trust between families and the multidisciplinary healthcare team.

Deontological findings:

The reviewed literature consistently emphasizes that physicians have a professional obligation to maintain competence through continuous education and adherence to evidence-based clinical guidelines. Regular updating of knowledge regarding evolving screening criteria, disease classification, and treatment strategies is considered an essential component of high-quality neonatal ophthalmic care.

Transparent communication with caregivers represents another fundamental professional responsibility. Honest discussion of prognosis, therapeutic options, potential complications, and the need for ongoing surveillance contributes to ethical clinical practice and supports informed parental decision-making.

The literature further highlights the importance of accurate clinical documentation and effective interdisciplinary collaboration. Comprehensive recording of screening examinations, timely communication between neonatologists and ophthalmologists, and coordinated referral pathways are essential for maintaining continuity of care and reducing preventable clinical errors.

In Albania, ongoing efforts to strengthen neonatal ophthalmic services further emphasize the importance of continuous professional development, multidisciplinary collaboration, and adherence to standardized clinical protocols as key elements of quality improvement.

Medico-legal findings:

The reviewed literature consistently identifies ROP as a condition associated with substantial medico-legal risk because irreversible visual impairment is frequently preventable when screening, diagnosis, referral, and treatment are performed according to accepted standards of care.

Reported causes of litigation include failure to screen eligible infants, delayed referral, inadequate follow-up, diagnostic inaccuracies, incomplete documentation, and ineffective communication with caregivers. These events are commonly categorized as negligence by omission, technical negligence, or organizational negligence, reflecting the multifactorial nature of adverse outcomes in neonatal care.

Recent literature increasingly emphasizes that medico-legal responsibility extends beyond individual healthcare professionals to encompass institutional accountability. Healthcare organizations share responsibility for ensuring adequate staffing, standardized clinical protocols, effective documentation systems, and coordinated referral pathways that support timely diagnosis and treatment.

Within the Albanian healthcare system, continued development of standardized screening protocols, comprehensive documentation, structured follow-up systems, and multidisciplinary clinical governance will be essential to improve patient safety, strengthen professional accountability, and reduce medico-legal risk as national ROP services continue to evolve.

The management of ROP requires an integrated clinical, ethical, and medico-legal approach. Although parents and caregivers have an important responsibility to cooperate with recommended screening and treatment procedures, parental non-adherence should not automatically absolve healthcare

professionals or institutions of their professional responsibilities. Physicians remain responsible for providing appropriate information, recommending evidence-based care, documenting communication, arranging appropriate referrals, and making reasonable efforts to reduce the risk of loss to follow-up.

Conversely, physicians should not be held automatically liable for every unfavorable outcome. ROP is a complex disease, and visual impairment may occur despite timely diagnosis and appropriate treatment. Distinguishing medical negligence from unavoidable complications or adverse outcomes is therefore essential in medico-legal assessment [10,26].

Comprehensive documentation is particularly important. Medical records should clearly document the infant's eligibility for screening, examination dates, clinical findings, treatment recommendations, parental counselling, informed consent, referrals, and follow-up arrangements. Appropriate documentation can support continuity of care while also providing an objective record of the clinical decision-making process.

Communication with parents is equally important. Parents should receive clear information regarding the nature of ROP, the importance of scheduled examinations, the potential consequences of delayed follow-up, treatment alternatives, and the need for urgent reassessment when indicated. Shared responsibility should therefore be understood not as a transfer of medical responsibility to parents but as a collaborative model in which clinicians and families fulfill distinct and complementary obligations.

The use of digital retinal imaging and tele-ophthalmology may provide an additional mechanism for improving access to specialist assessments, particularly in geographically underserved areas [12-14]. Such systems may also facilitate longitudinal documentation and quality assurance. However, technology should complement rather than replace appropriate clinical expertise and clearly defined referral pathways.

From an ethical perspective, the principle of justice requires that access to screening and treatment should not depend primarily on geographic location or socioeconomic status. A national screening and referral system could therefore reduce regional disparities and provide greater consistency in managing infants at risk of ROP.

Institutional responsibility is equally important. Healthcare institutions should provide appropriate equipment, staffing, training, referral mechanisms, and quality-assurance procedures. Ethical clinical practice cannot depend exclusively on physicians' individual diligence when systemic barriers prevent them from delivering appropriate care.

Strategies for Improvement.

Based on the identified challenges, several strategies should be considered:

A coordinated national ROP screening pathway for infants at high risk of ROP, including infants born before 31 weeks of gestation or with birth weight ≤1500 g, should be established.

Develop continuous professional development and accreditation programs for ophthalmologists, neonatologists, nurses, and other healthcare professionals involved in neonatal care.

Expand access to wide-field retinal imaging systems and tele-ophthalmology networks to support screening and specialist assessment in peripheral hospitals.

Establish or strengthen hospital ethics committees capable of addressing ethical issues arising in neonatal and pediatric ophthalmology.

Develop standardized counselling protocols and educational materials for parents and caregivers to improve understanding of ROP and adherence to follow-up recommendations.

Strengthen the referral and communication pathways between regional hospitals, tertiary neonatal units, and ophthalmologic centers.

Develop standardized documentation systems for screening, diagnosis, treatment, follow-up, and communication with families.

Limitations.

This study has several limitations. First, it is based primarily on narrative and interdisciplinary analyses rather than on a systematic review or a prospective clinical investigation. The available national evidence is limited, and much of the Albanian clinical context is derived from experience within the principal tertiary neonatal centers managing premature infants. There is also a dire need for further studies and alternative sources to assess and evaluate such a phenomenology; let alone the fact that regional situations might differ substantially, making generalizations difficult or unsound.

Second, the study does not include prospective longitudinal assessments of visual, neurodevelopmental, or quality-of-life outcomes among infants treated for ROP. Third, some ethical and deontological considerations are interpretative in nature and are intended to support reflection on professional responsibility, institutional governance, and healthcare policy rather than to establish definitive legal conclusions.

In addition, medico-legal liability is highly dependent on the facts of an individual case and on the applicable interpretation of national law. Accordingly, the legal considerations presented in this review should not be interpreted as substitutes for formal legal analysis. Obviously, the ethical-legal analysis is interpretive rather than empirical.

Nevertheless, this study provides an interdisciplinary overview of important challenges in ROP management and identifies priorities for improving neonatal ophthalmologic care in Albania.

Conclusion.

Retinopathy of prematurity is a prime example of how complex medical conditions can intersect with ethical, deontological, and legal responsibilities. Managing this condition effectively involves more than just technical clinical skills; it also requires professional competence, transparent communication, respect for the infant's best interests, equitable access to care, and strong institutional governance.

Families should receive clear and comprehensible information about ROP, its potential complications, the importance of screening and follow-up, and available treatment options. Additionally, parental participation should be viewed as part of a shared-care model rather than a complete transfer of professional responsibility.

The concepts of contributory and comparative negligence can help evaluate the responsibilities of healthcare professionals and caregivers when harm occurs. However, each case requires a careful assessment of the clinical circumstances, communication, documentation, and the relevant legal framework. Additionally, it is crucial to differentiate between medical malpractice and recognized complications to ensure that professional accountability is balanced with fairness for clinicians.

Strengthening national screening pathways, improving access to retinal imaging and specialist services, establishing reliable referral and follow-up systems, promoting continuing professional development, and incorporating ethical oversight into neonatal care should be priorities for the Albanian healthcare system. Such measures could help reduce preventable ROP-related blindness while promoting a healthcare model grounded in professional responsibility, justice, transparency, and respect for the dignity and best interests of vulnerable newborns.

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