

An integrated approach to managing arterial blood pressure and its impact on brain health

Un enfoque integrado para controlar la presión arterial y su impacto en la salud del cerebro

Irina Mihailovna Vakulenko

Saratov State Medical University named after V. I. Razumovsky Bolshaya Kazachia st., 112 Saratov, 410012 Russia.

<https://orcid.org/0009-0009-1814-0638>. vakuleko0201@icloud.com

Diana Sergeevna Ruznyaeva

Saratov State Medical University n.a. V.I. Razumovsky Street Bol'shaya Kazach'ya 112, 410012, Russia,

<https://orcid.org/0009-0001-0670-5437> diana.ruznyaev@mail.ru

Ripsime Aramovna Manukian

Voronezh State Medical University named after N.N. Burdenko, Street Studencheskaya 10, 394036, Russia.

<https://orcid.org/0000-0003-1706-2219> riul25@bk.ru

Diana Sar-Alievna Makaeva

GBU Vedenskaya CRB, Vedenskiy district, v. Vedenov, st. A. Kadyrova 8, 366337, Russia

<https://orcid.org/0009-0002-5792-3933> makayeva.diana@inbox.ru

Maryam Saygidovna Ulisova

Saratov State Medical University n.a. V.I. Razumovsky Street Bol'shaya Kazach'ya 112, 410012, Russia, <https://orcid.org/0009-0008-0015-9288>

ulisova2001@gmail.com

Anastasia Andreevna Mikheeva

Medical Institute, specialty «Medical business» N.P. Ogarev Mordovian State University

Bolshevistskaya Str. 68, Saransk, Republic of Mordovia, Russia, 430005. <https://orcid.org/0009-0007-3189-2610> miheeva94668@mail.ru

Olga Gennadyevna Gruzdova

Associate Professor, Candidate of Pedagogical Sciences, Department of Pedagogy and Psychology Penza State University, Krasnaya Street 40, Penza, 440026, Russia

<https://orcid.org/0000-0003-1752-1462> olga_gruzdova@mail.ru

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Abstract

This article addresses a pressing issue within contemporary medical practice: the imperative for adopting an integrated approach to arterial and cerebral blood pressure management. It underscores the necessity for implementing a holistic strategy to both treat and prevent arterial and cerebral blood pressure-related conditions, ultimately enhancing patients' quality of life. The authors delve into the fundamental principles of integrated medical practice, which encompass the collaborative efforts of diverse medical specialists, utilization of cutting-edge technologies, and customization of approaches tailored to individual patients. Central to this discussion are treatment and prevention strategies designed to comprehensively address the risk factors associated with various arterial and cerebral blood pressure-related ailments. The article offers insights into contemporary diagnostic methods, treatment modalities, and rehabilitation techniques, while also exploring early-stage

disease prevention measures. Notably, the authors highlight the significance of interdisciplinary collaboration among healthcare professionals, leveraging technological advancements to deliver the most efficacious and personalized care to patients. A pivotal aspect of the article pertains to the advocacy for active patient involvement in the decision-making process concerning their health. Emphasis is placed on patient education, fostering their proactive engagement in both prevention and treatment endeavors, and furnishing personalized information to empower informed decision-making. This patient-centric approach is deemed essential for optimizing health outcomes and fostering a sense of ownership and agency in managing arterial and cerebral blood pressure-related conditions.

Keywords: Arterial blood pressure, Cerebral blood pressure, Integrated medical practice, Patient involvement, Prevention strategies

Este artículo aborda un tema apremiante dentro de la práctica médica contemporánea: el imperativo de adoptar un enfoque integrado para el manejo de la presión arterial y cerebral. Subraya la necesidad de implementar una estrategia holística para tratar y prevenir afecciones relacionadas con la presión arterial y cerebral, mejorando en última instancia la calidad de vida de los pacientes. Los autores profundizan en los principios fundamentales de la práctica médica integrada, que abarcan los esfuerzos de colaboración de diversos especialistas médicos, la utilización de tecnologías de vanguardia y la personalización de enfoques adaptados a pacientes individuales. Un elemento central de esta discusión son las estrategias de tratamiento y prevención diseñadas para abordar de manera integral los factores de riesgo asociados con diversas dolencias relacionadas con la presión arterial y cerebral. El artículo ofrece información sobre los métodos de diagnóstico, modalidades de tratamiento y técnicas de rehabilitación contemporáneos, al mismo tiempo que explora medidas de prevención de enfermedades en etapas tempranas. En particular, los autores destacan la importancia de la colaboración interdisciplinaria entre los profesionales de la salud, aprovechando los avances tecnológicos para brindar la atención más eficaz y personalizada a los pacientes. Un aspecto fundamental del artículo se refiere a la promoción de la participación activa del paciente en el proceso de toma de decisiones relativas a su salud. Se hace hincapié en la educación del paciente, fomentando su participación proactiva tanto en los esfuerzos de prevención como en el tratamiento, y proporcionando información personalizada para potenciar la toma de decisiones informadas. Este enfoque centrado en el paciente se considera esencial para optimizar los resultados de salud y fomentar un sentido de propiedad y agencia en el manejo de las afecciones relacionadas con la presión arterial y cerebral.

Palabras clave: Presión arterial, Presión arterial cerebral, Práctica médica integrada, Implicación del paciente, Estrategias de prevención

In the realm of arterial and cerebral blood pressure, modern medicine confronts a myriad of challenges necessitating innovative and cohesive approaches to uphold optimal patient healthcare standards. Within this sphere, an integrated medical approach is steadily gaining prominence, entailing the amalgamation of diverse specialties and methodologies to attain superior outcomes in the management and mitigation of vascular health issues¹⁻³. This discourse is dedicated to scrutinizing and evaluating treatment and preventive strategies geared towards enhancing patients' quality of life through an integrated approach. Fundamental principles underpinning this approach will be explored, encompassing interdisciplinary collaboration among medical practitioners, leveraging cutting-edge technologies, and tailoring treatment modalities to individual patient profiles.

The objective extends beyond merely delineating the theoretical underpinnings of integration; it encompasses showcasing instances of its successful application in clinical settings. Furthermore, the imperative of involving patients in healthcare decision-making processes will be underscored, alongside prospects for the evolution of this concept, including the integration of modern technologies and artificial intelligence. The study entails an exhaustive review of pertinent literature within the purview of the research theme, employing comparative and analytical methodologies in source analysis.

The relevance of an integrated approach in contemporary medical practice stems from multifaceted factors coalescing to pose formidable challenges in upholding an optimal standard of public healthcare. Foremost among these challenges is the burgeoning complexity of diseases, characterized by chronicity and multifaceted manifestations necessitating holistic interventions and concerted efforts from specialists across diverse medical domains⁴⁻⁶. The integrated approach necessitates the convergence and synchronization of efforts by practitioners from various disciplines to establish a unified patient care framework. This assumes paramount significance in managing patients afflicted with multiple comorbidities, wherein the interplay of disparate factors must be carefully considered. Additionally, shifting demographics and lifestyle patterns exert a mounting strain on healthcare systems. Aging populations and individuals grappling with chronic ailments necessitate sustained, comprehensive care, often transcending the confines of conventional medical paradigms.

Furthermore, the integrated approach underscores the significance of preventive measures and early diagnosis, pivotal in enhancing patients' quality of life. The transition from a curative to a preventive healthcare

model underscores a proactive stance towards disease mitigation, with healthcare providers collaborating to devise personalized prevention strategies^{5,6}. Consequently, the adoption of an integrated approach emerges as a linchpin in tackling contemporary healthcare challenges, fostering more efficient, adaptable, and sustainable healthcare provision, underpinned by an overarching commitment to enhancing patients' quality of life.

At its core, the integrated approach in medical practice is predicated on several foundational principles aimed at amalgamating diverse facets of healthcare delivery to furnish more efficacious, coordinated, and personalized patient care. This entails close collaboration among practitioners hailing from diverse medical domains, including physicians, nurses, physiotherapists, psychologists, and other specialists, in devising comprehensive treatment regimens⁷⁻⁹. Moreover, the integrated approach actively integrates modern technologies to enhance disease diagnosis, monitoring, and management. Electronic health records, telemedicine consultations, and other technological innovations facilitate seamless information exchange and interaction among specialists^{10,11}. Central to this paradigm is the consideration of individual patient attributes, encompassing medical history, lifestyle preferences, and peculiarities, thereby tailoring treatment and preventive strategies to meet each patient's unique needs. Furthermore, the integrated approach encompasses endeavors to enhance public health, encompassing disease prevention initiatives, advocacy for healthy lifestyles, and bolstering community health improvement endeavors¹²⁻¹⁴.

In the realm of arterial blood pressure and its cerebral implications, the foundational concept of integrated medical practice underscores the establishment of a cohesive, adaptable framework. This framework fosters enhanced and precisely targeted healthcare delivery within the contemporary medical milieu.

Efficient treatment and preventative measures, aimed at mitigating the risk factors associated with various maladies, constitute a pivotal facet of integrated medical approaches. These strategies pivot not merely on remedying existing conditions but on preempting their onset. To achieve this, a systematic scrutiny of risk factors such as genetic predisposition, lifestyle choices, environmental factors, and others is imperative. This systematic analysis facilitates the identification of high-risk cohorts and the formulation of personalized preventative measures.

Moreover, emphasis is laid on addressing the root causes of ailments rather than merely alleviating symptoms. For instance, combatting cardiovascular diseases involves strategies encompassing blood pressure regulation, cholesterol management, blood sugar control, and more. Program development incorporating physical activity and wholesome dietary habits as cornerstones of a healthy lifestyle is paramount. Such programs should not only offer medical counsel but also foster a social milieu conducive to an active lifestyle.

Furthermore, the establishment of routine screening initiatives for early disease detection is imperative, facilitating more efficacious treatment, particularly for conditions like cancer, diabetes, and hypertension. Concurrently, efforts to combat detrimental habits like smoking and excessive alcohol consumption demand attention, with patient support and resources being integral to breaking such habits. Integration of psychosocial elements such as stress, depression, and social isolation into treatment and prevention strategies, along with mental health support, can augment physical well-being. Implementing preventive measures like medication intake to mitigate disease risks, regular vaccinations to stave off infections, and educational campaigns to bolster awareness about lifestyle choices and disease prevention are indispensable.

Collectively, these strategies engender an integrated and systematic healthcare approach, focusing on comprehensive risk mitigation and the enhancement of overall patient well-being. A comprehensive understanding of contemporary diagnostic, therapeutic, and rehabilitative methodologies assumes centrality within integrated medical paradigms. Key considerations in this regard encompass:

Utilization of genetic analysis, metabolomics, and proteomics to refine risk assessment and disease prognosis.

Advancements in imaging technologies such as MRI and CT for early disease detection and tissue assessment.

Exploration and application of biomarkers for early disease detection, facilitating prompt intervention.

Integration of digital technologies for remote patient monitoring and diagnosis, particularly beneficial in remote or inaccessible regions.

In patient treatment, a personalized approach grounded in individual patient characteristics, including genetic traits, is essential. This encompasses tailoring treatment modalities, leveraging immune stimulation against specific cancers and infections, employing gene therapy for genetic anomaly correction, especially pertinent in rare hereditary diseases, and utilizing nanotechnology for targeted drug delivery to minimize side effects. During patient rehabilitation, the amalgamation of remote rehabilitation techniques with psychological support and social reintegration is imperative. Screening programs

targeting early disease detection, especially among high-risk cohorts, and genetic health consultations for disease prevention are essential components. Modern diagnostic, therapeutic, and rehabilitative methodologies, coupled with proactive early detection initiatives, herald a more efficacious and holistic healthcare management paradigm, aligning with the ethos of integrated medical approaches.

The collaboration among physicians from diverse specialties and the integration of technological advancements are pivotal elements in a successful approach towards managing arterial blood pressure and its cerebral implications. In contemporary medical practice, ailments have evolved into multifaceted complexities, necessitating expertise across several medical domains^{2,8}. The synergy among specialists of varying profiles fosters a deeper comprehension and efficient management of such intricate conditions.

The interdisciplinary collaboration empowers the formulation of tailored treatment regimens. Recognizing each patient's uniqueness, amalgamating medical insights from diverse specialties enables comprehensive consideration of all facets of their health. Facilitating the exchange of expertise and technology among specialists contributes to precise and holistic diagnoses. This encompasses a comprehensive grasp of medical examinations and laboratory findings. The collective efforts of surgeons, therapists, rehabilitologists, and others provide a holistic treatment perspective, enhancing efficacy through coordinated interventions^{3,4,9}.

The incorporation of modern technologies, including artificial intelligence, data analytics, and telemedicine, streamlines diagnostic, therapeutic, and monitoring processes. Efficient technology deployment facilitates prompt access to vital information, streamlining informed decision-making. Electronic medical records and information exchange systems enable swift access to patients' medical histories across specialties, crucial in urgent or emergency scenarios. Collaborative training and participation in interdisciplinary conferences foster knowledge exchange, fortifying competencies and keeping practices updated⁷⁻⁹.

Overall, the interdisciplinary collaboration and technological integration cultivate an environment where patients receive more effective, personalized, and comprehensive care adhering to contemporary healthcare standards. The successful implementation of an inte-

grated approach in medical practice yields numerous positive impacts on healthcare and societal well-being. It enhances treatment efficacy by uniting specialists within a cohesive system, while also promoting preventive measures and early disease detection, thereby mitigating disease severity^{5,8,10}.

Furthermore, it advocates disease prevention and early detection, potentially reducing the need for costly treatments and prolonged rehabilitation. Consequently, this may lead to a gradual reduction in overall healthcare expenditures over time. The integrated approach prioritizes enhancing patients' quality of life through personalized rehabilitation programs, chronic disease support, and health education initiatives⁹. Active preventive measures and patient educational programs underpin self-care, adherence to recommendations, and patient engagement in health maintenance. By leveraging information exchange and technology, the integrated approach can expedite diagnosis and treatment, optimizing resource allocation for enhanced efficiency in patient care⁸⁻¹¹.

This approach fosters judicious utilization of medical resources, potentially expanding access to high-quality care for a larger populace. Particularly effective in managing chronic conditions like diabetes and cardiovascular diseases, it augments patient prognosis and quality of life^{7,12}. Consequently, successful integration in medical practice not only enhances individual health outcomes but also augments the effectiveness of healthcare systems, elevating societal well-being. The involvement of patients in their health decision-making process plays a pivotal role in achieving successful treatment outcomes, enhancing quality of life, and overall well-being. Studies indicate that well-informed patients exhibit more effective symptom management, better compliance with medical recommendations, and greater participation in preventive measures¹²⁻¹⁴.

Providing personalized health information empowers patients to make informed decisions, particularly in treatment selection scenarios. Collaborative decision-making between physicians and patients reduces patient stress levels and enhances satisfaction with treatment outcomes. Moreover, patient involvement in disease-specific organizations and communities facilitates experiential exchange, support, and education, fostering better disease management^{15,16}. Leveraging electronic platforms for health information dissemination enables conscientious health management by patients, exemplified by e-health portals offering medical data access and educational resources.

Considering patient preferences in decision-making enhances treatment satisfaction and promotes adherence to medical recommendations. The development of educational programs focusing on health literacy equips patients with the knowledge to make informed health decisions. These studies underscore the significance

of patient involvement, education, and personalized information provision in fostering better health management, treatment adherence, and improved outcomes¹⁷⁻¹⁹. The future of integrated medicine holds promise with groundbreaking technologies and innovations poised to revolutionize disease diagnosis, monitoring, and prediction. Artificial intelligence enhances diagnostic accuracy by analyzing medical images, test results, and other parameters.

Utilizing AI for analyzing genetic data facilitates personalized treatment strategies tailored to individual patient characteristics. Big data analysis enables precise disease prediction models and the development of effective prevention programs. Technological advancements in remote patient monitoring enable real-time condition assessment, complemented by virtual communication methods and telemedicine applications for remote diagnostics^{19,20}. Additionally, genomic editing technologies hold potential for correcting genetic mutations and treating genetic diseases, while leveraging genetic information for personalized treatment approaches²¹. These advancements herald a future of more accurate, personalized, and effective methods for preventing, diagnosing, and treating various diseases.

Conclusions

An integrated approach to medical practice, which combines various methodologies for addressing arterial and cerebral blood pressure, holds promise for significant enhancements in the healthcare sector. Collaboration among diverse medical experts, integration of cutting-edge technologies, and active patient engagement are pivotal in achieving efficacious and tailored treatments. This holistic approach proves particularly beneficial in managing complex conditions necessitating coordinated efforts from multiple specialists. Utilizing integrated strategies enables more efficient prevention of blood pressure-related ailments, facilitates early detection, and enables proactive interventions to enhance overall vascular health. Active patient participation in decision-making processes, coupled with educational initiatives and the dissemination of personalized health information, are paramount in achieving optimal treatment outcomes.

Integration, including technological applications, can yield long-term reductions in healthcare expenditures. The shift towards personalized medicine, leveraging genetic insights and individual patient characteristics, ensures precision and efficacy in treatment modalities. Incorporating blockchain, nanotechnology, genomic editing, and other innovative advancements holds vast potential for advancing medical practices. Emphasizing preventive measures within the integrated approach

aids in curbing morbidity rates and elevating population-wide health standards. Consequently, an integrated approach in arterial and cerebral blood pressure management emerges as a promising avenue for modern healthcare systems, offering more efficient, personalized, and preventative care modalities.

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