



**ФУНДАМЕНТАЛ ВА
КЛИНИК ТИББИЁТ
АХБОРОТНОМАСИ**

***BULLETIN OF* FUNDAMENTAL
AND CLINIC MEDICINE**

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**BULLETIN OF FUNDAMENTAL
AND CLINIC MEDICINE**

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ТИББИЁТ АХБОРОТНОМАСИ
ВЕСТНИК ФУНДАМЕНТАЛЬНОЙ И
КЛИНИЧЕСКОЙ МЕДИЦИНЫ**

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IMPACT OF ANDROGEN DEPRIVATION MODALITIES ON SURVIVAL AND QUALITY OF LIFE IN ADVANCED PROSTATE CANCER**Yodgorov I.F.**

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Resume. Androgen deprivation therapy (ADT) remains the cornerstone of treatment for advanced and metastatic prostate cancer. However, the choice of ADT modality significantly influences not only oncological outcomes but also treatment tolerability and quality of life. This study evaluates the comparative effectiveness and quality-of-life outcomes of various androgen deprivation strategies, including surgical castration, luteinizing hormone-releasing hormone (LHRH) agonists, LHRH antagonists, and combined androgen blockade. Clinical response, prostate-specific antigen (PSA) dynamics, survival outcomes, adverse events, and patient-reported quality-of-life indicators were analyzed. The results demonstrate that combined androgen blockade provides superior oncological control, while LHRH antagonists offer a favorable balance between efficacy and tolerability. These findings support an individualized approach to hormonal therapy selection in patients with advanced prostate cancer.

Keywords: prostate cancer; androgen deprivation therapy; LHRH agonists; LHRH antagonists; combined androgen blockade; quality of life.

**ПРОСТАТА БЕЗИНИНГ ТАРҚАЛГАН САРАТОНИДА АНДРОГЕН ДЕПРИВАЦИЯ
УСУЛЛАРИНИНГ ОМОН ҚОЛИШ ВА ҲАЁТ СИФАТИГА ТАЪСИРИ****Ёдгоров И.Ф.**

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Резюме. Андроген-деприватсион терапия (АДТ) простата безининг тарқалган ва метастатик саратонини даволашнинг асосий усули бўлиб қолмоқда. Бироқ, АДТ усулини танлаш нафақат онкологик натижаларга, балки даволашнинг чидамлилиги ва ҳаёт сифатига ҳам сезиларли таъсир кўрсатади. Ушбу тадқиқот жарроҳлик кастрацияси, лютеинловчи гормон-рилизинг гормони (LHRH) агонистлари, LHRH антагонистлари ва комбинацияланган андроген блокадани ўз ичига олган турли хил андроген деприватсия стратегияларининг қиёсий самарадорлиги ва ҳаёт сифатини баҳолайди. Клиник жавоб, простатага хос антигенни (ПСА) аниқлаш динамикаси, яшовчанлик, нохуш ҳодисалар ва беморлар томонидан хабар қилинган ҳаёт сифати кўрсаткичлари таҳлил қилинди. Натижалар шуни кўрсатадики, андрогенларнинг комбинацияланган блокадаси саратон касалликлари устидан ажойиб назоратни таъминлайди, LHRH антагонистлари эса самарадорлик ва чидамлилиқ ўртасида қулай мувозанатни таъминлайди. Ушбу маълумотлар простата безининг тарқалган саратони билан оғриган беморларда гормонал терапияни танлашга индивидуал ёндашувни тасдиқлайди.

Калит сўзлар: простата беги саратони; андроген деприватсион терапия; LHRH агонистлари; LHRH антагонистлари; комбинацияланган андроген блокада; ҳаёт сифати

ВЛИЯНИЕ МЕТОДОВ АНДРОГЕННОЙ ДЕПРИВАЦИИ НА ВЫЖИВАЕМОСТЬ И КАЧЕСТВО ЖИЗНИ ПРИ РАСПРОСТРАНЕННОМ РАКЕ ПРЕДСТАТЕЛЬНОЙ ЖЕЛЕЗЫ**Ёдгоров И.Ф.**

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Резюме. Андроген-депривационная терапия (АДТ) остается краеугольным камнем лечения распространенного и метастатического рака предстательной железы. Однако выбор метода АДТ существенно влияет не только на онкологические исходы, но и на переносимость лечения и качество жизни. В этом исследовании оценивается сравнительная эффективность и качество жизни различных стратегий андрогенной депривации, включая хирургическую кастрацию, агонисты лютеинизирующего гормона-рилизинг-гормона (LHRH), антагонисты LHRH и комбинированную андрогенную блокаду. Были проанализированы клинический ответ, динамика определения простатспецифического антигена (ПСА), выживаемость, нежелательные явления и показатели качества жизни, о которых сообщали пациенты. Результаты показывают, что комбинированная блокада андрогенов обеспечивает превосходный контроль над онкологическими заболеваниями, в то время как антагонисты LHRH обеспечивают благоприятный баланс между эффективностью и переносимостью. Эти дан-

ные подтверждают индивидуальный подход к выбору гормональной терапии у пациентов с распространенным раком предстательной железы.

Ключевые слова: рак предстательной железы; андрогенная депривационная терапия; агонисты LHRH; антагонисты LHRH; комбинированная андрогенная блокада; качество жизни

Introduction. Prostate cancer is one of the most prevalent malignancies among men worldwide and represents a major health burden in aging populations. For patients with locally advanced or metastatic disease, androgen deprivation therapy remains the primary systemic treatment option. Since the growth and progression of prostate cancer are largely driven by androgen receptor signaling, therapeutic strategies aimed at suppressing testosterone production or blocking androgen receptor activation are highly effective.

Despite comparable oncological efficacy among various ADT modalities, differences in onset of action, adverse event profiles, and impact on quality of life are increasingly recognized as clinically relevant. With prolonged survival in advanced prostate cancer, maintaining functional status and psychological well-being has become a critical treatment goal. Therefore, comparative evaluation of different hormonal therapy strategies is essential for optimizing patient-centered care.

Materials and methods. A retrospective observational study was conducted involving patients diagnosed with advanced prostate cancer (T2–T4, N0–1, M0–1) who received hormonal therapy between 2020 and 2024 at a tertiary oncology center. Patients were included if they had histologically confirmed prostate adenocarcinoma and complete clinical follow-up data.

Treatment groups: Patients were stratified into four treatment groups according to the type of androgen deprivation therapy:

- Group I: Surgical castration (orchiectomy)
- Group II: LHRH agonists
- Group III: Combined androgen blockade (LHRH agonist + antiandrogen)
- Group IV: LHRH antagonists

Outcome Measures. Treatment efficacy was assessed using:

1. PSA response at 1 and 3 months;
2. progression-free survival (PFS);
3. overall survival (OS);

Safety and tolerability were evaluated by the frequency and severity of adverse events. Quality of life was assessed using the EORTC QLQ-C30 questionnaire and the prostate cancer-specific PR25 module. Descriptive statistics and comparative analyses were performed. Survival outcomes were estimated using Kaplan–Meier analysis. A p -value < 0.05 was considered statistically significant.

Results. All hormonal therapy modalities resulted in significant PSA reduction. The most rapid and pronounced PSA decline was observed in patients receiving combined androgen blockade, followed by LHRH antagonists. Surgical castration showed a slower biochemical response but sustained androgen suppression. All hormonal therapy modalities resulted in significant PSA reduction. The most rapid and pronounced PSA decline was observed in patients receiving combined androgen blockade, followed by LHRH antagonists. Surgical castration showed a slower biochemical response but sustained androgen suppression. Combined androgen blockade was associated with the highest 3-year progression-free survival rates. Patients treated with LHRH antagonists demonstrated survival outcomes comparable to those receiving LHRH agonists, with fewer treatment-related complications. The overall incidence of adverse events was highest in the orchiectomy group, where psycho-emotional disturbances, osteoporosis, and severe asthenia were more frequently observed. LHRH antagonists exhibited the most favorable tolerability profile, with fewer vasomotor symptoms and less fatigue. Patients receiving LHRH antagonists and combined therapy reported better preservation of physical functioning, emotional well-being, and social activity. In contrast, surgically treated patients had the lowest scores in emotional and sexual functioning domains.

A total of 116 patients with advanced prostate cancer were included in the study. The mean age of the cohort was 71.4 ± 6.2 years, with no statistically significant age differences between the treatment groups. The majority of patients (78.4%) were diagnosed with stage III–IV disease, indicating advanced tumor burden at the time of treatment initiation. Baseline PSA levels were comparable across all groups, with a mean value of 74.2 ± 15.3 ng/mL, ensuring uniformity of the initial disease status.

The most pronounced biochemical response was observed in Group III (combined androgen blockade), where 93% of patients achieved a $\geq 50\%$ PSA reduction and 65% achieved a $\geq 90\%$ reduction. Comparable, though slightly lower, response rates were noted in Group II (LHRH analogues) and Group IV (LHRH antagonists), with PSA reductions $\geq 50\%$ observed in 87% and 88% of patients, respectively. Group I (or-

chiectomy) demonstrated the lowest biochemical response rate (81%), although PSA suppression remained clinically meaningful.

Survival analysis revealed significant differences between treatment modalities. The highest overall 3-year survival rate was observed in Group III (78.6%), followed by Group II (71.1%), Group IV (69.2%), and Group I (64.3%). Similarly, 3-year recurrence-free survival was superior in the combined therapy group (66.7%) compared with LHRH analogues (55.3%) and orchiectomy (48.1%). Data on recurrence-free survival were not available for the LHRH antagonist group.

These findings indicate that combined androgen blockade provides the most favorable long-term oncological outcomes among the evaluated treatment strategies.

Discussion. The findings confirm that while all androgen deprivation strategies effectively suppress disease progression, their clinical impact differs substantially in terms of tolerability and quality of life. Combined androgen blockade provides superior oncological control, supporting its use in patients with aggressive or high-risk disease. LHRH antagonists offer distinct advantages due to rapid testosterone suppression without flare phenomena and improved tolerability, making them particularly suitable for elderly patients and those with significant comorbidities. The negative impact of surgical castration on psychological and emotional health underscores the importance of considering patient preferences and long-term quality-of-life outcomes when selecting therapy. These results reinforce the shift toward personalized hormonal therapy, where treatment decisions are guided not only by disease characteristics but also by patient-centered outcomes.

Conclusion. Different androgen deprivation strategies demonstrate comparable efficacy in advanced prostate cancer but vary significantly in tolerability and quality-of-life impact. Combined androgen blockade remains the most effective approach for disease control, whereas LHRH antagonists provide an optimal balance between efficacy and safety. Individualized selection of hormonal therapy is essential to maximize survival outcomes while preserving quality of life in patients with advanced prostate cancer. Among the evaluated approaches, combined androgen blockade showed the most pronounced therapeutic benefit, offering superior biochemical response and more favorable survival indicators compared with monotherapy options. This finding supports the concept that simultaneous suppression of androgen production and inhibition of androgen receptor signaling enhances treatment efficacy, particularly in patients with aggressive or high-risk disease.

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