Use of Enzalutamide in Carcinoma Prostate


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Abstract

Patients with metastatic prostate cancer are initially treated with androgen deprivation therapy as androgen receptor (AR) signalling is a key pathway in prostate cancer. Castration-resistant prostate cancer (CRPC) is a stage when patients stop responding to androgen deprivation therapy but are still dependent on AR signalling. Enzalutamide, an orally available AR inhibitor, was initially used in the treatment of patients with metastatic CRPC who had previously received docetaxel. The indications have subsequently been extended to include all patients with metastatic CRPC, and most recently to include patients with non-metastatic CRPC. On December 16, 2019, the Food and Drug Administration approved enzalutamide for patients with metastatic castration-sensitive prostate cancer (mCSPC).

Keywords: Enzalutamide • Prostate-specific antigen • Safety • Treatment outcome.

Introduction

Enzalutamide is an orally administered, small-molecule inhibitor of the androgen receptor that is designed to overcome acquired resistance to first-generation nonsteroidal androgens, including bicalutamide, nilutamide, and flutamide. Its chemical name is (4-(3-(4-cyano-3-(trifluoromethyl) phenyl) - 5,5-dimethyl -4 -oxo-2- thioximidazolidin-1-yl)-2- fluoromethyl benzamide) and was synthesized in 2006 using the non-steroidal agonist RU-58633 as a starting chemical scaffold. This starting compound has a high affinity and selectivity for androgen receptor (AR) over other nuclear hormone receptors [1]. Cryptorchidism, family history of testicular cancer, a personal history of testicular cancer, and intratubular germ cell neoplastic (ITGCN) are the four well-established risk factors for testicular cancer [2,3]. Serum tumour marker levels are obtained at diagnosis, after orchectomy, so as to monitor for response to chemotherapy, and to monitor for relapse in patients on surveillance and after completion of therapy [4].

Case Report

The decisions regarding the initial management and the prognosis of the GCT are dictated by CS of the disease, which is based on the histopathologic findings and pathologic stage of the primary tumour, serum tumour marker levels measured after orchectomy, and the presence and extent of metastatic disease as determined by physical examination and staging imaging studies [1] (Figure 2). The American Joint Committee on Cancer (AJCC) and Union International Centre le Cancer (UICC) jointly proposed an international consensus classification for GCT in 1997, which is unique, as for the first time a serum tumour marker category (S) based on post-orchectomy AFP, HCG, and LDH levels was used to supplement the prognostic stages as defined by the anatomic extent of disease [5].

A good PDP is not just the responsibility of a human resource department but should be in the DNA of the whole organization. Professional development should be an intrinsic part of standard operating procedures. Part of the issues with social media usage in this organization is the lack of professional development in this area. Leadership teams that support professional development of personnel can ensure triumphant long-term service for the agency. A PDP should not be a once a year appraisal.

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Yigit and Bagceci evaluated the contributions of action research to teachers’ professional development. The professional development was essential for organizational goals and policies. The study consisted of six educators that appraised the usage of action research in professional development. Establishing an effective PDP is a significant factor to ensure the efficiency of improvements at any level. Yigit and Bagceci suggested that a development plan can help professionals assist clients to improve their skills, realize their potential, and acquire knowledge. It is essential that employees have the confidence, skills, and awareness to reach professional goals. A productive PDP can help to affirm this process at New Horizons. The researchers suggested that the teachers in their study conveyed that action research had a productive impact on their professional development in the following ways:

- Knowledge of field
- Discipline
- Positive impact on learners
- Methodologies
- Conscious of actions
- Job description

Yigit and Bagceci suggested that action research is a cycle of inquiry. This cycle of action can be used to identify problems or weaknesses. The action research approach coordinates well with a PDP. The chart below compares the steps involved in both general action research and professional development action steps: With New Horizons’ concerns about the uses of social media, it is essential that an action research study be utilized to collect data on how a PDP and assessment process will serve the agency’s needs with this matter.

Castro-Garcés and Martinez-Granada suggested that action research focuses on driving change in a context study. The collection of data in an action research approach begins with a question that leads to an investigation and establishing techniques for collecting data. Once the data is collected, it must be interpreted to develop and implement an action plan to address the problem. The researchers implied it would be essential to appraise the current plan to assess new problems. Then the most important part of the process, reflection [3, 4].

The reflection process should involve the following questions:

- What does the data tell us?
- What changes could be instituted?

The action research approach is a cyclical process to ensure an ongoing enrichment mechanism to engage problems and information to enact change. Using an action research design for collecting data is an appropriate methodology process to pilot this study because it will allow the staff at New Horizons to be co-researchers and focus on realizing practical solutions to developmental and communication issues within the agency. Green and Huntington used an action research approach to collect data in the public healthcare environment to determine a best practice approach in providing safe and effective interventions for clients. The participants in the action research model worked in small professional development communities to classify potential professional development subject matter (social media) and the development of an online learning lesson program for employees. After the staff had taken the online learning activities, the activity would be evaluated to identify areas of learning needs. The key feature of this cyclical process is that information that is obtained from the online assessments could be used to create other learning activities. The feedback that is communicated to the staff will allow them to reflect on their knowledge and opportunities for improvement [5].

Solution-based on data collection

The proposal to use an effective action research learning process can be very valuable to New Horizons. Huh, Lee suggested that action learning distinguishes itself from other learning methods in that necessitate learners to take actions centered on project outcomes. During implementing a solution based on data collection, and reflecting on the ramifications of their actions, the learners are given more opportunities for improvement through learning activities. This solution-based approach has many benefits it encompasses a multifaceted process and a higher level of participation from staff members [6].

The goal in the solution process is to enable staff to be able to collaborate with researchers, establish agendas, build solutions to opportunities for improvements they have identified, and improve their professional progression in an ethical method. The Glossary of Education Reform suggested evaluating our solution based on data collection [6].

We will guide the process by these five learning-centered questions:

- What do employees need to know?
- How will we know that they have obtained it?
- How will they acquire the learning?
- What is the next step if they didn’t learn it?
- How will we enrich the learning if they already know it?

(These questions will be the focus during all phases of the online learning activities).

Evaluating the solution

Elwyn and Hocking suggested that a professional development plan (PDP) will only increase when a support system is established for general purposes to establish best practices. However, PDPs are only the beginning of the process. Practitioners should conceptually the uses of this approach as their chance to learn how to learn, to adopt the organizational guidelines, and develop an approach that can be reproduced for future challenges. PDPs will work best where there is effective leadership within an organization. The leadership team should be able to communicate the importance and relevance of the program [7-9].
Conclusion

Use of enzalutamide has resulted in a high level of disease control in different disease settings and in subgroups of patients with mCRPC and nmCRPC across several landmark clinical trials. In men with metastatic hormone-sensitive prostate cancer receiving testosterone suppression, the addition of enzalutamide has resulted in longer overall survival, PSA progression-free survival, and clinical progression-free survival within 3 years than the use of standard nonsteroidal antiandrogen therapy. Enzalutamide was associated with some additional toxic effects, including fatigue and a small risk of seizures. Overall, enzalutamide has been well tolerated both in young and elderly patients.

References

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