IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 24, Issue 5 Ser. 3 (May. 2025), PP 22-30
www.iosrjournals.org

Challenges In The Management Of Advanced Prostate Cancer In The Elderly Male: A Single Centre Retrospective Study In Aba, South Eastern Nigeria

Ibe U Ibe
Consultant Urologist,
Department Of Surgery,
Abia State University Teaching Hospital,
Aba- Nigeria

Obinna Chikezie
Medical Officer,
Department Of Medical Services
Ministry Of Health
Umuahia- Nigeria

Abstract:
Prostate cancer (PC) is the most common cancer among Nigerian men with increasing morbidity and mortality. Due to poor screening knowledge and practice, most of these cancers are diagnosed at an advanced stage. The aim of this was to review the challenges experienced by surgeons in the management of these advanced cases in the elderly age groups basically men above 60 years.
It was a retrospective study spanning 5 years from January 2020- December 2024.
Of the 136 men who had histopathologically confirmed cases of prostate cancer within the study period, 114 men (83.8%) were in the elderly age group.
Out of these 114 men, 98 (85.9%) presented for treatment and had one form of androgen deprivation therapy or the other. The rest of 16 (14%) did not receive Androgen Deprivation Therapy (ADT).
Out of the 95 men who had ADT, only 65 had follow up adjuvant external beam radiotherapy (RT).
The most severe adverse effects of ADT – Cardiovascular effects, cognitive decline, chronic anemia and depression were most common in the advanced age.
The most severe adverse effects of RT- Cystitis, lymphoedema of scrotum and incomplete urethral stricture were most common in the very elderly group.
46 men out of the 98 who had ADT (46.98%) relapsed with castration resistance and were subjected to docetaxel – prednisolone chemotherapy.
The most severe adverse effects were also most common within the very elder group and because of their capacity for fluid and electrolyte imbalance, which is deemed dangerous.
Overall, the combination of Abiraterone - prednisolone did not show significant adverse effects.
The challenges of managing advanced disease in the elderly are enormous because of the propensity for severe adverse effects with advancing age and also because of several comorbidities in these age groups.
Keywords: *Advanced prostate cancer, challenges in management, elderly age group and Aba.*

Date of Submission: 04-05-2025 Date of Acceptance: 14-05-2025

I. Introduction:

Prostate cancer is the most common cancer among African American men rarely diagnosed before the age of 50 years.

It is the most incident and prevalent non cutenous malignancy in the USA and the second most common cause of cancer death in the USA.

However, men of African ancestry have higher incidence, morbidity and mortality.

In Nigeria, prostate cancer is the most common cancer among Nigerian men (Ikuewero et al 2013) with increasing morbidity and mortality.

In Nigeria, most of these cancers present at an advanced stage (Muhammed and Muhammed)

Advanced prostate cancer refers to the following stages:
- Locally advanced stage
- metastatic stage
- castration resistance stage

Elderly age refers to men at or above 60 years of age.

Challenges seen in the management of men with advanced prostate cancer in this age group are due to:
- Challenges arising from the adverse effects of the modalities of treatment
- Challenges arising from the complications of cancer itself such as pathological fractures and paraplegia.
- Challenges arising from co-morbidities in this age group.

Of these 3, the challenges of adverse effects constitute the major challenge.
Radical prostatectomy is not a recommended modality of treatment in advanced treatment cancer.
Even in the early stage setting where it is recommended, it is associated with grave consequences.

Androgen deprivation therapy is the first in the management of advanced prostate cancer. It is often administered through surgical castration (Bilateral total orchidectomy), medical castration (luteinizing hormone releasing hormone analogue and androgen receptor blockers).

The adverse effects arise due to deprivation of androgen to the organs and tissues that normally require it to function such as"
- Brain – cognitive decline
- heart- cardiovascular adverse effects
- muscle – reduction in muscle mass
- Sexual system – erectile dysfunction and loss of libido
- Others

At elderly age, there is already a reduction in function due to Aging and further ablation of androgen sources, has deleterious consequences.
Men with severe co-morbidities such as diabetes mellitus may be complicated by metabolic syndrome.

Those with prolonged hypertension with secondary effects on the cardiovascular system particularly the heart usually develop worse condition.
Often times, follow up external beam radiotherapy is an adjuvant treatment in advanced disease.

Radiotherapy has poor perception and acceptance coupled with high cost of treatment. Many patients particularly the elderly tend to be aversive to the radiotherapy which is a key management tool.

The patients that eventually undergo radiotherapy are exposed to some adverse effects which further worsen their morbid conditions.

Brachytherapy is not recommended for advanced disease as it is a therapy for completely confined prostate cancer.

External Beam radiotherapy promotes a good quality of life and elongates the period before onset of castration resistance.

The many patients who for fear of radiotherapy and its high cost soon relapse due to the onset of castration resistance which is mainly managed by chemotherapy, a modality also resented for its adverse effects and poor public perceptions.

This scenario brings patients to have Abiraterone- Prednisolone therapy instead of Docetaxel - Prednisolone chemotherapy.
In our experience, adverse effects have been minimal with Abiraterone.

Additionally, challenges arising from the complications of the cancer such as pathological fracture and paraplegia include:
- High risk of deep vein thrombosis due to immobility at and old age
- Prolonged catherization with its attendant complications
- Loss of weight due to loss in muscles mass
- Depression etc

All this must be taken into account when managing the elderly with advanced prostate cancer.
It is advisable to institute modalities that will present fewer challenges both to the patients and to the clinician.

II. Methodology

The study was a retrospective review of all the histopathologically diagnosed prostate cancers within the study period of five years from January 2020 to December 2024.
Their case files were retrieved and essential information gotten.

The information gotten included- Age, histopathology results, modality of management, adverse effects and challenges of management.
All the data were collated, analyzed and interpreted

Inclusion Criteria
Men with histopathologically diagnosed prostate cancer 61 years and above found within the study period.

Exclusion Criteria
Men with histopathologically diagnosed prostate cancer younger than 61 years and seen outside the study period were excluded from the study.

III. Results

Table 1 – Showing Age Group Characteristics Of Histopathogically Confirmed Prostate Adeno Carcinomas N=136

S/NO	AGE GROUP	NUMBER	PERCENTAGE
1	40 – 50 yrs	2	1.5%
2	51- 60 yrs	20	14.7%
3	61- 70 yrs	42	30.9%
4	71- 80 yrs	46	33.8%
5	81-90 yrs	23	16.9%
6	91- 100 yrs	3	2.2%
7	**TOTAL**	**136**	**100%**

The age above 60 yrs is considered an elderly age and here out of 136 histopathologically diagnosed cases 114 (83.8%) were seen in the elderly age group.

Fig 1 Bar Chart

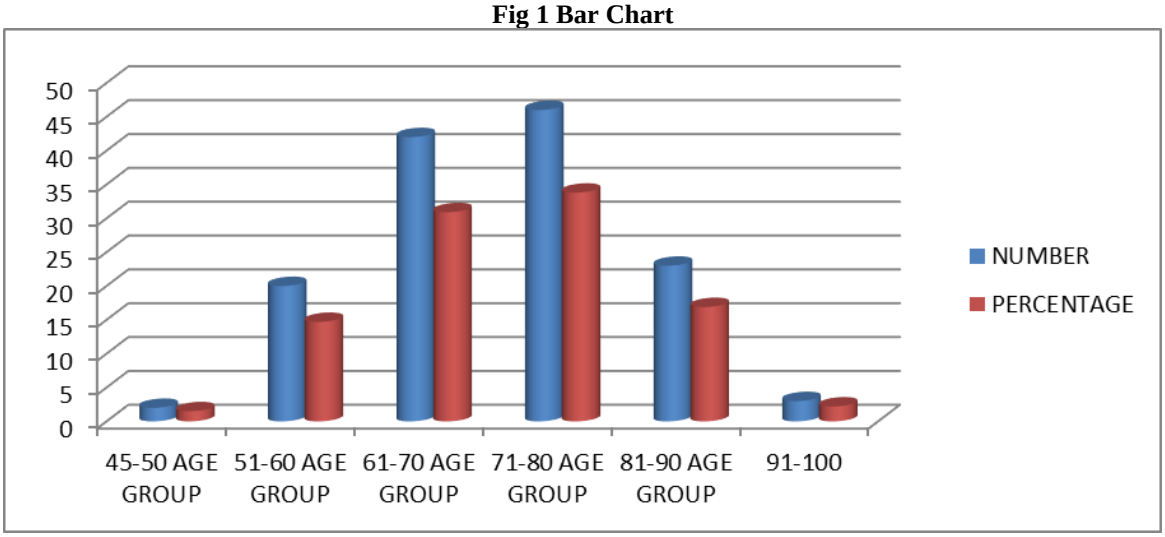

Table 2 – Showing Age Group Characteristics Of Elderly Population With N= 114

S/NO	ELDERLY AGE GROUP	NUMBER	PERCENTAGE
1	61-70 yrs	42	36.8%
2	71- 80 yrs	46	40.4%
3	81- 90 yrs	23	20.2%
4	91 – 100 yrs	3	2.6%
5	**TOTAL**	**114**	**100%**

Out of 136 cases diagnosed within the study period, 114 (83.8) occurred within the elderly age group above 60 yrs.

Fig 2 Bar Chart

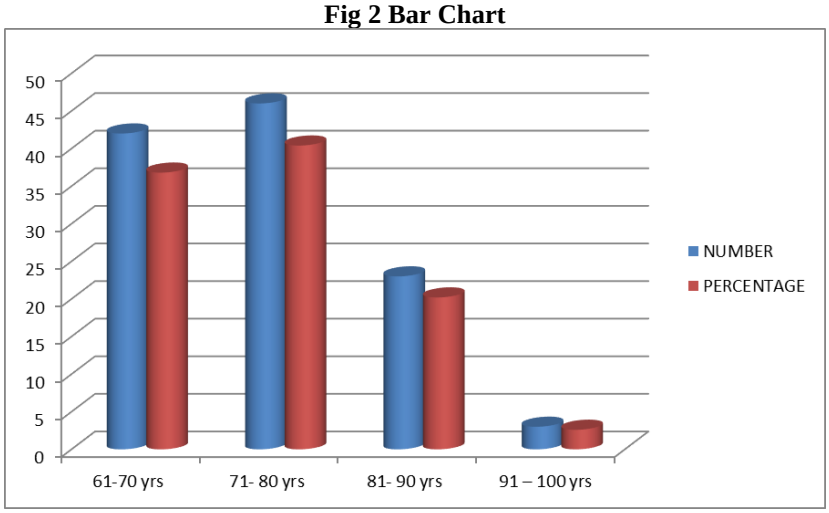

Table 3 – Showing The Age Group Distribution Of Elderly Men Who Had Androgen Deprivation Therapy N=48

S/NO	ELDERLY AGE GROUP	NUMBER	PERCENTAGE
1	61-70 yrs	42	42.9%
2	71- 80 yrs	35	35.7%
3	81- 90 yrs	18	18.4%
4	91- 100 yrs	3	3.1%
5	**TOTAL**	**114**	**100%**

Out of 114 elderly patients only 98 (85.9%) presented for treatment with one form of Androgen Deprivation Therapy (ADT) or the open.
The rest of 116 (14%) did not receive ADT

Fig 3 Bar Chart

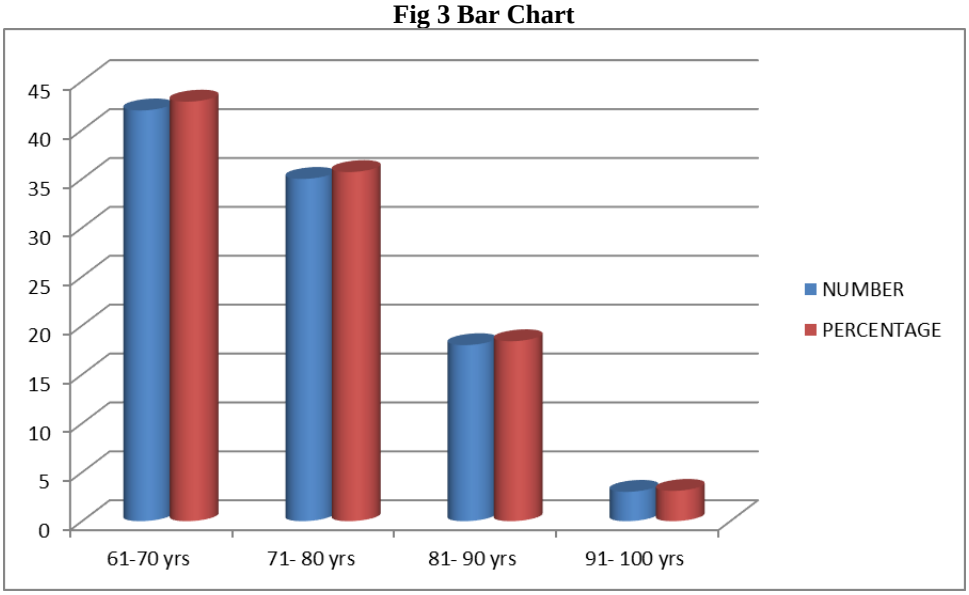

Table 4 – Showing The Adverse Effects Seen After Adt Management

S/NO	ADVERSE	NUMBER	PERCENTAGE
1	Loss of libido	75	76.5%
2	Erectile Dysfunction	70	71.4%
3	Hot Flushes	70	71.4%
4	Gynaecomastia	65	66.3%
5	Loss in muscle mass	55	56.1%
6	Cardiovascular effects	45	45.9%
7	Chronic anemia	12	12.2%
8	Cognitive Decline	12	12.2%
9	Depression	4	4.1%

Each patient had more than one adverse effect. These adverse effects were found to be of greater serenity than in men below 60 yrs.

Table 5 – Showing The Age Group Distribution Of The Most Severe Adverse Effects

S/NO	AGE GROUP	ADVERSE EFFECTS	NUMBER
1	61- 70 yrs	Cardiovascular Chronic Anaemia Cognitive Decline depression	5 Nil Nil Nil
2	71- 80 yrs	Cardiovascular Chronic Anaemia Cognitive decline Depression	15 3 3 Nil
3	81-70 yrs	Cardiovascular Chronic Anaemia Cognitive Decline Depression	22 6 6 2
4	91- 100 yrs	Cardiovascular Chronic Anaemia Cognitive Decline Depression	3 3 3 2

The most severe adverse effects were worse with increasing age. Cognitive decline and depression were mostly seen after 80 yrs.

Table 6 – Showing The Age Group Distribution Of Elderly Men Who Had Adjuvant Radiotherapy Following Androgen Deprivation Therapy (Adt) N= 65

S/NO	ELDERLY AGE GROUP	NUMBER	PERCENTAGE
1	61- 70 yrs	28	43. 1%
2	71- 80 yrs	24	36.9%
3	81- 90 yrs	13	20%
4	91- 100	Nil	0%
5	**TOTAL**	**65**	**100%**

Out of the 98 patients who had Androgen Abatus therapy only 65 (66.3%) had follow up external beam Radiotherapy.

Fig 4 Bar Chart

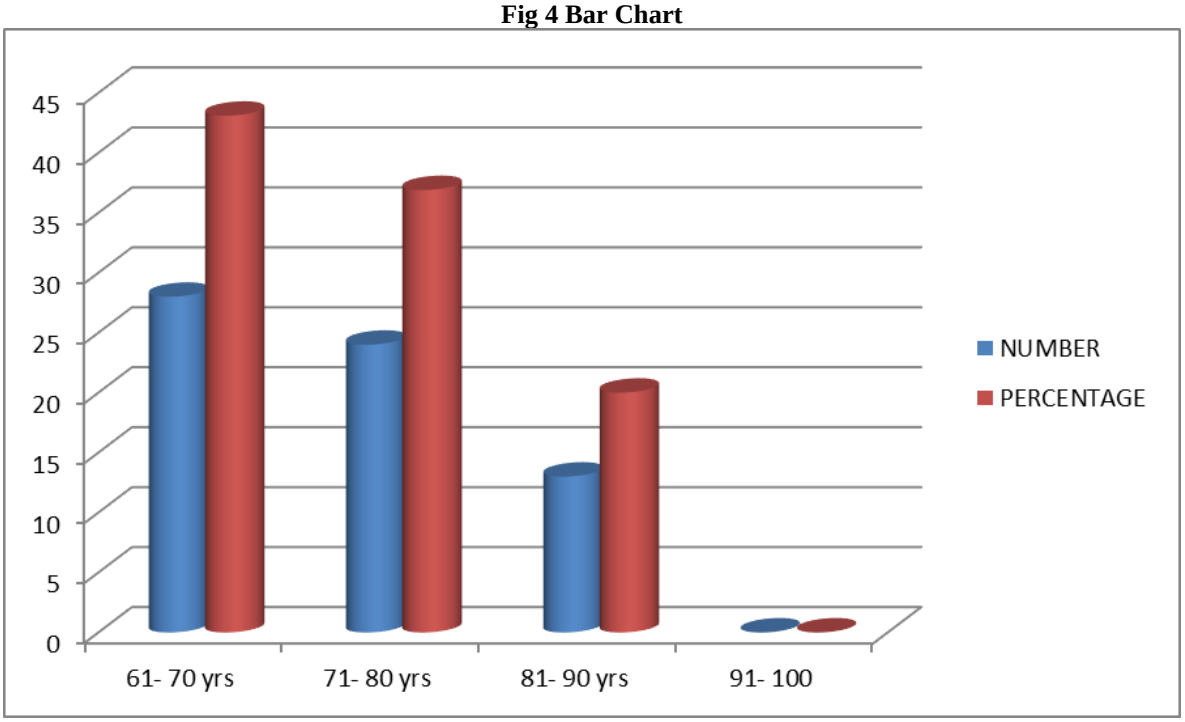

Table 7 – Showing The Adverse Effects Of Men Who Had Followed Up Radiotherapy

S/NO	ADVERSE EFFECTS	NUMBER	PERCENTAGE
1	Diarrhea	30	46.2%
2	Nausea and vomiting	26	40.0%
3	Dermatitis (supra public region)	20	30.8%
4	Obstructive voiding	20	30.85
5	Rashes at genital and buttocks	15	23.1%
6	Radiation cystitis	13	20.0%
7	Fatique	13	20.0%
8	Temporary Erectile Dysfunction	10	15.4%
9	Pubic hair loss	8	12.3%
10	Lymph-edema of scrotum	2	3.0%
11	Haematocheizia	1	1.5%
12	Incomplete urethral stricture	1	1.5%

Table 8 – Showing The Age Group Distribution Of The Most Severe Adverse Effects Following Radiotherapy

S/NO	ELDERLY AGE GROUP	ADVERSE EFFECTS	NUMBER
1	61-70 yrs	Radiation cystitis Lymhoedema scrotum Haematochezia Incomplete urethral stricture	3 0 0 0
2	71- 80 yrs	Radiation cystitis Lymhoedema scrotum Haematochezia Incomplete urethral stricture	4 1 0 1
3	81- 90 yrs	Radiation cystitis Lymhoedema scrotum Haematochezia Incomplete urethral stricture	7 1 1 0
4	90- 100 yrs	Radiation cystitis Lymhoedema scrotum Haematochezia Incomplete urethral stricture	0 0 0 0

Table 9 – Showing The Age Group Distribution Of Elderly Men Who Had Docetaxel – Predisoleone Chemotherapy Following Castration Ressistance N=46

S/NO	AGE GROUP	NUMBER	PERCENTAGE
1	61-70 yrs	19	41.3%
2	71- 80 yrs	17	36.9%
3	81- 90 yrs	8	17.4%
4	91- 100 yrs	2	4.3%

Out of the 98 persons who commenced Androgen Deprivation Therapy, only 46 (46.9%) received Docetacel - Prednisolone Chemotherapy following castration resistance.

Fig 5 Bar Chart

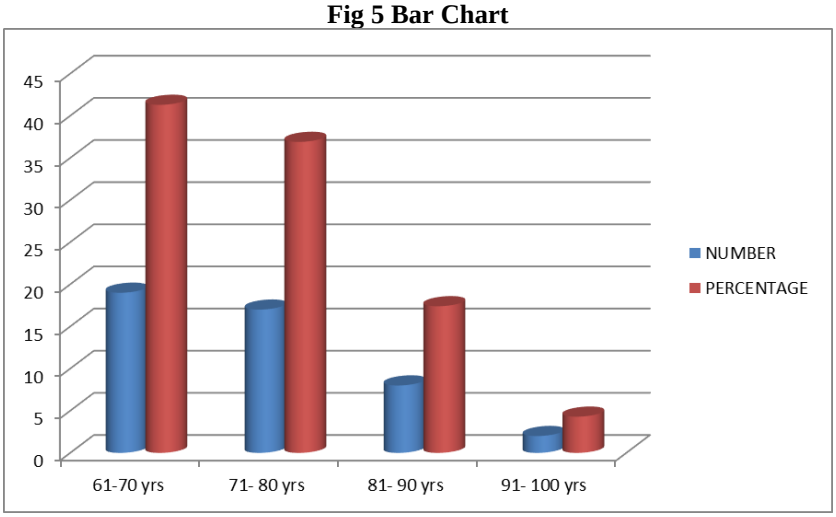

Table 10 – Showing The Adverse Effects Seen In Elderly Men Who Received Docetaxel - Predisoleone Chemotherapy N= 46

S/NO	ADVERSE EFFECTS	NUMBER	PERCENTAGE
1	MALAISE	20	43.5%
2	FATIQUE	18	39.1%
3	FEVER	17	36.9%
4	DIARRTHEA	15	32.6%
5	NAUSEA AND VOMITING	12	26.1%
6	SCALP HAIR LOSS	4	8.7%

Malaise was the most common adverse effect 43.5% followed by fatigue 39.1%.

The most severe adverse effects were Diarrhea 32.6% and nausea and vomiting 26.1% because of potential fluid and electrolyte imbalance in the elderly.

Table 11 – Showing The Age Group Distribution Of The Most Challenging Adverse Effects

S/NO	ELDERLY AGE GROUP	ADVERSE EFECTS	NUMBER
1	61-70 Yrs	Diarrhea vomiting	1 0
2	71- 80 yrs	Diarrhea Vomiting	1 1
3	81-90 yrs	Diarrhea Vomiting	3 3
4	91- 80 yrs	Diarrhea Vomiting	2 2

Abiraterone –Therapy

This therapy did not record noticeable and significant adverse effects except malaise, fatigue and nausea in a few patients.

Only one patient had noticeable elevation of his blood pressure but never gone beyond 150/90 mmHg.

On the whole, 15 patients had abiraterone therapy after receiving docetaxel – prednisolone chemotherapy.

5 Elderly men who had no adjuvant external Beam Radiotherapy initially eventually had radiotherapy after completion of docetaxel prednisolone chemotherapy following castration resistance.

IV. Discussion

Prostate cancer is the most common cancer among African Americans.

Most men of African ancestry have higher incidence, morbidity and mortality.

Due to poor screening knowledge and practice, most of the cases and diagnosed at an advanced stage of the disease- locally advanced, metastatic and castration resistant stages.

Modalities of management of advanced diseases include:

- Androgen deprivation therapy (ADT)
- External Beam Radiotherapy (RT)
- Docetaxel – prednisolone chemotherapy (CTX)
- Abiraterone – prednisolone therapy

As useful as they are, they are associated with adverse effects which constitute challenges in management.

The adverse effects appear to increase in incidence and morbidity in the elderly age groups which make it more challenging.

In our work, we found out that the most feared adverse effects under androgen deprivation therapy occurred in the elderly age group particularly between 70- 90 years. Similar results were seen in men who had undergone radiotherapy and chemotherapy. Only Abiraterone showed minimal side effects.

In a work by Mostafa R. Muhammed et al on primary treatment modification and treatment tolerability among older chemotherapy recipients with advanced cancer, they concluded that older patients with cancer are generally considered to be more vulnerable to the adverse effects of cytotoxic drugs such as poor tolerability compared with younger patients due to:

- Disabilities
- Deterioration in organ function
- Other geriatric impairment such impaired cognition that may add to treatment toxicity.

Despite these vulnerabilities, older adults are often given aggressive chemotherapeutic agents with high risk of toxicity which can alternately lead to treatment delays and poor cancer control.

Although aggressive cytotoxic therapies have the potential to extend life among older adults with advanced cancer and Aging related conditions, they also can cause serious adverse effects than may worsen the quality of life.

Nourhan M. Bassyong et al, on their work on the impact of androgen deprivation therapy on the cognitive function of elderly men with prostate cancer, they concluded that the use of ADT cause cognitive decline and regression of some of the cognitive domains and depression in elderly patients with prostate cancer who received ADT for a period of 6 months.

They recommended that cognitive function and depressions screening be assessed regularly after onset of ADT.

Amir Alinejad Khorram et al in their work on – a meta analysis on androgen deprivation therapy use and the risk of heart failure in patient with prostate cancer: A systematic meta analysis concluded that there is a significantly increased risk of heart failure with ADT. ADT has a significant relationship with cardiovascular diseases.

According to the analysis, ADT has increased the risk of heart failure in people with prostate cancer by 30%.

T. Pignon et al on their work on radiotherapy (RT) in the elderly concluded that in clinical practice, advanced age may result in under treatment even though patients may have no other medical illness and no functional impairment.

Some co-morbid conditions which are more frequent in older people or patients may complicate the outcome of treatment.

However these impaired vital functions are not an intrinsic feature of the elderly.

Radiotherapy treatment plays a vital role in curative and palliative cancer treatment.

Over all, non compliance of RT related to co-mobidity or technical condition is rare.

Short term RT using large daily fraction is often advocated in the elderly.

However, this should be only considered if a palliative option has been selected due to the high risk of late adverse effects.

Acute adverse effects often results in decreasing doses of RT.

V. Conclusion

In our study in Aba, we found a significant relationship between increasing age and severe adverse effects of most modalities of management of advanced prostate cancer.

The more elderly a patient is, the more deleterious the adverse effects appear to be.

VI. Recommendations

1, There is need to carefully select the modality to employ when confronted by elderly men with advanced prostate cancer. In the very elderly, temporary protocols such as medical castration which may be suspended at any time may be more amenable than permanent protocols such as surgical castration.

2. For elderly men with need for external beam radiotherapy, efforts must be made to reduce the duration of exposure.

3. For the elderly men with significant co-mobidities, efforts must be made to stabilize these conditions and optimize the patients prior to commencement of any modality of treatment.

References

[1] Jaime Gomez, Milan Radiation Therapy In The Elderly. More Side Effects And Complications. Critical Review In Oncology/ Haematology Volume 71, Issue 1, July 2009, Pages 70-78.

[2] Grace L Smith, Benjamin D Smith Radiation Treatment In Older Patients. A Framework For Clinical Decision Making. J-Clin Oncol 2014 July 28 32 (24) 2669-2678.

[3] Gaurav Trivedi Etal Radiotherapy For Geriatric Cancer Patients, Five Year Experience At North Indian Tertiary Care Hospital Asian Pacific Journal Of Cancer Care Volume 8 No 2

[4] Jiang Tong, Tom K- Hei Aging And Age Related Health Effects Of Ionizing Radiation. Radiation Medicine And Protection Volume 1, Issue 1, March 2020 Page 15-23

[5] Legido-Gomez Etal Effects Of Androgen Deprivation Therapy On Elderly Men With High Risk Prostate Cancer: Prosarc Observational Study Actas Urologicas Espanocas May 2024 Pages 304-310

[6] Nourhan M Bassyouug, Mohamed M Gouda, Mai M Ezz Din, Hala S Sweed, Rania M El Akkad Impact Of Androgen Deprivation Therapy On The Cognitive Function Of Elderly Men With Prostate Cancer. OJM: An International Jornal Of Medicine. Volume 117, Issue Supplementary 2 October 2024 Hcac 171322

[7] Helkki Seikuca, Peten J Bostrom, Antti Kaipia. Survival And Mortality Of Elderly Men With Localized Prostate Cancer Managed With Primary Androgen Deprivation Therapy Or By Primary Observation. BMC Urology 20, Article Number 25 (2020)

[8] Janice Kim, Kendal Freeman, Accysa Ayaca, Mckay Muccen 2 Ijie Sun, June Whn Rhee Cardiovascular Impact Of Androgen Deprivation Therapy: From Basic Biology To Clinical Practice. Current Oncd Rep 2023 Juue S (25 (9) : 965 -977

[9] Scott Edelman, Javed Butlen, Bruce W Hershatter, Mohamed K Khan, The Effects Of Androgen Deprivation Therapy On Cardiac Function And Heart Failure: Implications For Management Of Prostate Cancer Clinical Genitourinary Cancer Vol 12 Issue 6 December 2014, Pages 399- 407.

[10] Chi- Fai- Ng, Peter K.F. Chiu Jeremy Y.C. Effect Of Androgen Deprivation Therapy On Cardiovascular Function In Chinese Patients With Advanced Prostate Cancer. A Prospective Cohort Study Open Access 22 October 2020.

[11] Vijaya R. Bhatt Cancer In Older Adults: Understanding Course And Effects Of Chemotherapy – Related Toxicicities Future Oncology: Future Oncol. 2019 Jul. 24:15 (22) 2557-2560
[12] Joosje C. Baltessen, Nienke A. De Glas, Yara Van Holistein Etal Chemotherapy Related Toxic Effects And Quality Of Life And Physical Functioning In Older Patients. Jama Netw Open 2023, 6 (10)
[13] Lazzaro Repetto Greater Risks Of Chemotherapy Toxicity In Elderly Patients With Cancer. J. Support Oncol 2003 Nov- Dec.
[14] N. Wilking, Chemotherapy In The Elderly. European Journal Of Surgical Oncology Ejso. Vol. 24, Issue 5, Oct 1998 Pages 412-417
[15] Carole Farrel, Catherine Heaven Understanding The Impact Of Chemotherapy On Dignity For Older People And Their Partners European Journal Of Oncology Nursing Volume 36 October 2018 Pages 82-88.
[16] Mathew R. Smith, Danae Rathropf, Peter Fa, Mulders Joan Carles, Hendrick Van Poppel, Jinhu.U, Thian Kheoh, Thomas W. Griffin, Arturo Molina, Charles J. Rhan Efficacy And Safety Of Abiraterone In Elderly (More Than 75 Years) Chemotherapy Naïve Patients With Metastatic Castration Resistant Prostate Cancer J Urol 2015 Nov.
[17] Peter FA, Mulder Arturo Molina, Michael Marberger, Fred Sadd, Celesta S. Higano, Kim N. Chi, Jinhui Li, Thian Kheoh, Christian Her M Hagg Karim Fizazi. Efficacy And Safety Of Abiraterone In An Elderly Patients Subgroup (Aged 75 And Older) With Metastatic Castration Resistant Prostate Cancer After Docetaxel Based Chemotherapy. European Urology Volume 65 Issue 5 May 2014 Pages 875- 883.
[18] Xiaolen Zhu, Shenhong Wu, Risk Of Hypertension In Cancer Patients Treated With Abiraterone: A Meta Analysis Clinical Hypertension 25. Article Number 12 (2019)