

The Gulf Journal of Oncology

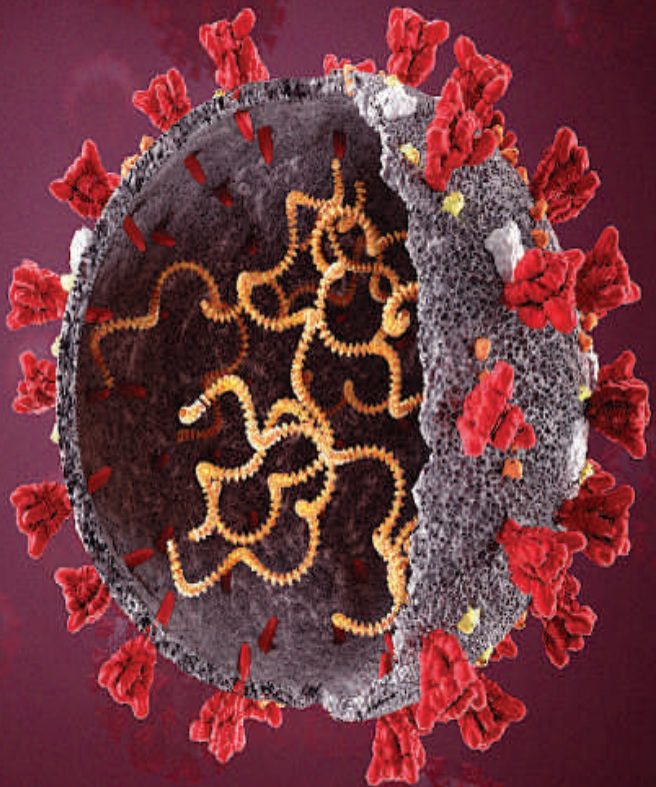


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Table of Contents

Original Articles

Mutation Profiling Of Intracranial Myxopapillary Ependymoma By Next Generation DNA Sequencing	07
Mohiuddin M. Taher, Abdulaziz Abdulnasser Alhussini, Muhammad Saeed, Mohammad Athar, Najwa Abdalkabeer A. Bantan, Raid A. Jastania, Kamal Bakour Balkhoyour, and Tahani H. Nageeti	
Evaluation Of Pathological Response And Its Predictors In Carcinoma Rectum Following Neoadjuvant Chemoradiation	17
Shoaib Nawaz, Sangeetha.k.Nayanar, Nabeel Yahiya	
Correlation Between Tumor Infiltration CD8+ T-cells And PD-L1 Expression In Laryngeal Cancer And Their Prognostic Significance: Prospective Non-interventional Trial	23
Maha Ismail, Marwa M. Shakweer, Hesham El Wakiel, Dalia Abd El Ghany, Ahmed Gaballah	
The Prognostic Value Of The ART Score Before The Second Transarterial Chemoembolization.....	32
Fatima Zahra. Hamdoun, Younes Hassani, Hakima. Abid, Youssef. Lamrani Alaoui, Mounia. El Yousfi, Dafr-allah Benajah, Moustapha. Maaroufi, Mohammed. El Abkari, SidiAdil. Ibrahim, Nada. Lahmidani	
Decoding The Genetic Alterations In Cytochrome P450 Family 3 Genes And Its Association With HNSCC.....	36
S.Kamala Devi, A.Paramasivam, A.S.Smiline Girija, J. Vijayashree Priyadharsini	
Comparative Study Of The Effect Of Licorice Muco-adhesive Film On Radiotherapy Induced Oral Mucositis, A Randomized Controlled Clinical Trial.....	42
Fahimeh Pakravan, Niloofer Heydari Salehabad, Fatemeh Karimi, Mehdi Nasr Isfahani	
Cytoreductive Surgery And Hyperthermic Intraperitoneal Chemotherapy For Recurrent Ovarian Cancer: The First Reported Experience From Saudi Arabia	48
Ahmed Abu-Zaid, Osama Alomar, Ahmed Nazer, Hany Salem, Tarek Amin, Ismail A. Al-Badawi	
Compliance With Oral Hormonal Therapy For Breast Cancer At Oman National Oncology Center; Descriptive Study	56
Suad Al Kharusi, Bahaeldin Baraka, Laila Al Balushi, Mahmoud Nassar	
A Comparative Study Of Concurrent Chemo-Radiotherapy With Or Without Neoadjuvant Chemotherapy In Treatment Of Locally Advanced Non Small Cell Lung Cancer.....	62
Simrandeep Singh, Ratika Gupta, Tejinder paul Singh, S. L. Jakhar, Neeti Sharma, H. S. Kumar	
Evaluation Of Intraoperative Touch Imprint Cytology Of Axillary Sentinel Lymph Node Accuracy In Comparison To The Permanent Histology Diagnosis. A prospective study Of 25 Invasive Breast Cancers.....	70
Mohammed S Saeed MD, Taha Al-Lawati PhD, Fatma Al Lawati MD, Raymond N. Elias MD	

Review Article

Cardiovascular Toxicity Associated With Tyrosine Kinase Inhibitor Therapy In Chronic Myeloid Leukemia	79
Abdulaziz A. Binzaid, Omar J. Baqal, Mohammed Soheib, Mohammad Al Nahedh, Hadeel H. Samarkand, Mahmoud Aljurf	

Case Reports

Transoral Surgical Excision Of A Parapharyngeal Space Tumour: Case Report And Literature Review.....	85
Nik Mohd Syahrul Hafizzi Awang, Ali Haron, Baharudin Abdullah	
Infratemporal Fossa Synovial Sarcoma In A 3-Month-Old Infant: An Extremely Rare Tumour In Infancy.....	91
Nur Adillah Lamry, Khairunnisak Misron, Tengku Mohamed Izam Tengku Kamalden, Sakinah Mohamad	
Low-Grade Endometrial Stromal Sarcoma Extending To The Right Atrium	95
Reem M. Hersi, Bashair Y. AlHidri, Hatim M. Al-Jifree, Mohammad Althobaiti, Hatim Q. Almaghraby	

Conference Highlights/Scientific Contributions

• News Notes.....	99
• Advertisements	103
• Scientific events in the GCC and the Arab World for 2021	104



Compliance with Oral Hormonal Therapy for Breast Cancer at Oman National Oncology Center; Descriptive Study

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Abstract

Introduction: Breast cancer is the commonest cancer amongst females. The incidence of breast cancer is estimated to be around 260K yearly. Oral hormonal medication is an essential part of the management of breast cancer for hormone receptor–positive patients. Adjuvant hormonal medication is recommended to be taken daily for 5–10 years. Adjuvant hormonal medication reduces mortality by 30% and the recurrence rate in receptor–positive patients.

Patients and Methods: This study's primary goal is to evaluate the rate of nonadherence to Endocrine Therapy for hormone receptor–positive breast cancer patients at Oman National Oncology Center. This study included patients taking hormonal therapy (either with Tamoxifen or Aromatase inhibitor) and presented for regular follow–up between June 2019 and February 2020 at the National oncology center, Oman. Data was collected using a written questionnaire. Descriptive analysis was done by using SPSS. A cross–sectional descriptive study for patients taking oral hormonal therapy. 131 patients were included.

Results: One hundred thirty–one patients were included, Tamoxifen was used by 73 (55.73%). 71 (54%) of breast

surgery was “WLE.” The majority of patients 95 (72.5%) did not identify a specific reason for non–compliance. The most commonly reported adverse effects were musculoskeletal symptoms by 75 patients (57.3%), with other reported side effects included hot flashes (33.6%), anxiety (30.5%), gynecological toxicity (29.8%), decreased concentration (19.1%), neurological symptoms (16%), and depression (9.9%).

Discussion: We reported that patients with hormone receptor–positive breast cancer have a high adherence rate to the medication than developing countries; self–reported non–compliance to oral hormonal medication is 41.22% below the average of non–compliance to chronic disease therapy of developing countries as WHO report. Medical insurance, unemployment, or drug cost is not a cause for non–compliance to medication.

Conclusion: The self–reported nonadherence to oral hormonal medication is (41,22%). Most of the patients (72.5%) did not report a specific cause for non–adherent to medication. Close follow–up is recommended increasing compliance to medication.

Keywords: Hormonal, therapy, breast neoplasms, Compliance, Adjuvant Endocrine.

Introduction:

Breast cancer is the commonest cancer in females^(1,2) and the second common cancer worldwide after lung cancer⁽³⁾. The incidence of breast cancer is estimated to be around 260K yearly⁽⁴⁾. Breast cancer mortality is continuously decreasing due to early detection and treatment improvements with adjuvant therapy^(5–7). Hormone receptor–positive patients are about two–thirds of the patients⁽⁸⁾. Adjuvant Endocrine Therapy (AET) is an essential part of breast cancer management for hormone receptor–positive patients. AET is recommended to be taken daily for 5–10 years^(9,10). AET reduces mortality by 30% and recurrence rate in receptor–positive patients

^(11,12). The rate of recurrence and mortality is increased among patients who are not compliant with AET therapy^(13,14).

Medication compliance means how the patient follows physician prescription orders in terms of frequency and therapy duration⁽¹⁵⁾. Worldwide non–compliance rate

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of AET is 31%–73%^(16,17). The rate is different between countries, 12% in Japan⁽¹⁸⁾, 13.4% in Chinese⁽¹⁹⁾.

Different factors affect compliance to oral hormonal medication, e.g., Habit, resource barriers, and risk/benefit balances⁽²⁰⁾. Non-compliance to oral hormonal medication is high in vulnerable patients^(21–25).

Aim of the study

This study's primary goal is to evaluate the rate of nonadherence to oral hormonal medication for hormone receptor-positive breast cancer patients at Oman National Oncology Center. The second goal is to identify the cause of nonadherence to medication.

Methods:

This study included patients taking hormonal therapy (either with Tamoxifen or Aromatase inhibitor) and presented for regular follow-up between June 2019 and February 2020 at the National oncology center in Oman. We excluded patients who refused to take medication. Data was collected using a written questionnaire. The questionnaire is modified from the Morisky Medication Adherence Scale (MMAS-8)⁽²⁶⁾. Descriptive analysis was done by using SPSS version 25. A cross-sectional descriptive study for patients taking oral hormonal therapy.

Result:

The study included 131 patients; 105 (80.15%) patients were more than 38 years old, unemployed patients were 91 (69.47%). 84 (64.12%) patients had a high school certificate or higher, 64 (48.85%) patients lived in "Muscat." 77 (58.78%) patients had self-reported nonadherence to medications (Table No.1).

Tamoxifen was used by 73 (55.73%). 71 (54%) of breast surgery was wide local excision (WLE) as in table no 2. Regarding causes of non-compliance, the majority of patients 95 (72.5%) did not identify a specific reason for non-compliance; 11 patients (8.4%) listed fear of potential side effects as a reason for non-compliance, 9 (6.9%) discontinued the drug due to having too many medications, and 7 (5.3%) due to mistrust of the doctor's motivation, while other reported reasons included misunderstanding the need for medication (3.8%), lack of symptoms (2.3%), and forgetfulness (0.8%) (Table 4). [figure 1]

The most commonly reported adverse effects were musculoskeletal symptoms by 75 patients (57.3%), with other reported side effects included hot flashes 44(33.6%), anxiety 40(30.5%), gynecological toxicity 39(29.8%), decreased concentration (19.1%), neurological symptoms

Socio-demographic characteristics	
	N=131 (%)
Age	
≤ 35	10 (7.63%)
36–38	16 (12.21%)
>38	105 (80.15%)
Employed	
No	91 (69.47%)
Yes	40 (30.53%)
Married	
No	17 (12.98%)
Yes	114 (87.02%)
Level of education	
Less than high school certificate	47 (35.88%)
High school certificate or higher	84 (64.12%)
Province	
Muscat	64 (48.85%)
Dhofar	9 (6.87%)
Others	58 (44.27%)
Self-reported nonadherence	
Yes (at least three pills)	54 (41.22%)
No	77 (58.78%)

Table 1: Socio-demographic characteristics

Medical and treatment-related characteristics	
	N=131 (%)
Medicine	
Tamoxifen	73 (55.73%)
Letrazole	52 (39.69%)
Exemestane/others	6 (4.58%)
Breast surgery	
Wide local excision	71 (54.20%)
Mastectomy	53 (40.46%)
Not operated	7 (5.34%)
Clinical stage	
Stage I	21 (16.03%)
Stage II/III	95 (72.52%)
Stage IV	15 (11.45%)

Table 2: Medical and treatment-related characteristics

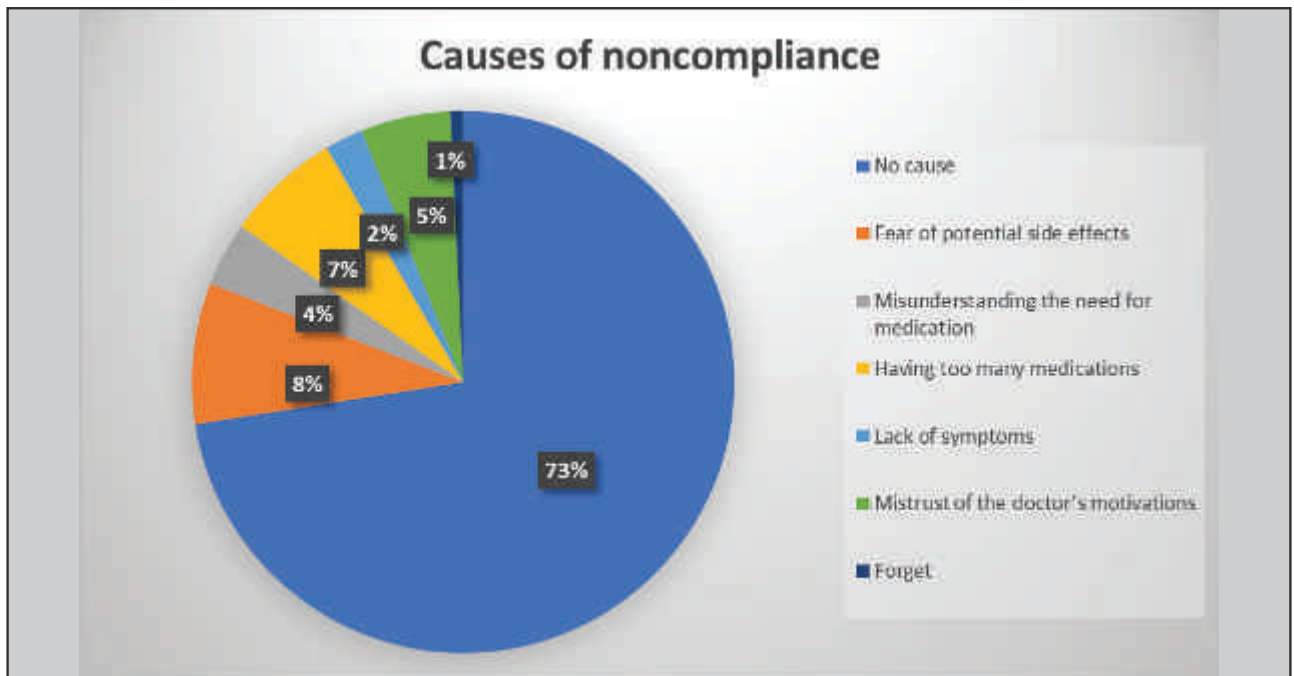


Fig. 1: Non-compliance causes

	Medication			Total
	Tamoxifen	Letrozole	Exemestane	No (%)
Gynecological toxicity	17 (28.3%)	20 (29.9%)	2 (50%)	39 (29.8%)
Hot Flashes	27 (45%)	16 (23.9%)	1 (25%)	44 (33.6%)
Musculoskeletal symptoms	40 (66.7%)	32 (47.8%)	3 (75%)	75 (57.3%)
Lack of concentration	14 (23.3%)	11 (16.4%)	0 (0.0%)	25 (19.1%)
Neurological symptoms	11 (18.3%)	9 (13.4%)	1 (25%)	21 (16%)
Depression	9 (15%)	4 (6%)	0 (0.0%)	13 (9.9%)
Anxiety	19 (31.7%)	20 (29.9%)	1 (25%)	40 (30.5%)

Table 3: Medication side effect

Causes of non-compliance	
	N=131 (%)
No cause	95(72.5)
Fear of potential side effects	11(8.4)
Misunderstanding the need for medication	5(3.8)
Having too many medications	9(6.9)
Lack of symptoms	3(2.3)
Mistrust of the doctor's motivations	7(5.3)
Forget	1(0.8)

Table 4: Non-compliance causes

(16%), and depression (9.9%). Generally, adverse events were reported more among patients on Tamoxifen compared to those on letrozole, namely musculoskeletal symptoms (66.7% VS 47.8%), hot flashes (45% VS 23.9%), and depression (15% VS 6%) (Table 3).

Concerning medication compliance, 90 patients (45.2%) reported missing the medication dose in the previous day, with 20 patients (10.1%) admitting to sometimes forgetting to take the medication and 22 (11.1%) missing doses in the past two weeks, with 21 (10.6%) expressing difficulty in sticking to their treatment plan (Table 4).

A more significant percentage of patients who did not complete schooling (90.5%) missed treatment for no reason compared to those who completed schooling

(60.2%); moreover, patients who completed schooling/higher education were more likely to miss the medication due to fear of potential side effects, mistrust of the doctor's motivation, and having too many medications compared to patients who did not complete schooling (Table 5 and 6).

Discussion:

We reported that patients with hormone receptor-positive breast cancer have a high adherence rate to the medication compared with developing countries; self-reported non-compliance to oral hormonal medication is

41.22% below the average of non-compliance to chronic disease therapy of developing countries as WHO report ⁽²⁷⁾.

Medical insurance, unemployment, or drug cost is not a cause for non-compliance to medication. There is an insignificant statistical difference between the level of education and non-compliance to medication. Fear of potential side effects is the most identified cause of non-compliance 11(8.4%), which need more patient education and close follow-up to ensure the patient and manage any side effect of the medication.

		Educational level		Total
		No schooling completed	Completed school/higher	
Cause of missing treatment	No cause	48 (90.5%)	47 (60.2%)	95 (72.5%)
	Fear of potential side effects	1 (1.9%)	10 (12.8%)	11 (8.4%)
	Misunderstanding the need for medication	2 (3.8%)	3 (3.8%)	5 (3.8%)
	Having too many medications	1 (1.9%)	8 (10.3)	9 (6.9%)
	Lack of symptoms	1 (1.9%)	2 (2.6%)	3 (2.3%)
	Mistrust of the doctor's motivations	0 (0.0%)	7 (9%)	7 (5.3%)
	Forget	0 (0.0%)	1 (1.3%)	1 (0.8%)
Total		53 (100%)	78 (100%)	131 (100%)

Table 5: Cross table of reasons of non-compliance with medication to education

	Educational level	
	No schooling completed	completed school/higher
Do you sometimes forget to take your medicine?	6 (8.8%)	14 (10.7%)
Were there any days when you did not take your pills over the past 2 weeks?	12 (17.6%)	10 (7.6%)
Have you ever cut back or stopped taking your medication without telling your doctor, because you felt worse when you took it?	1 (1.5%)	6 (4.6%)
When you travel or leave home, do you sometimes forget to bring along your medication?	1 (1.5%)	11 (8.4%)
Did you take your medicine yesterday?	35 (51.5%)	55 (42%)
When you feel like your health concern is under control, do you sometimes stop taking your medicine?	4 (5.9%)	10 (7.6%)
Do you ever feel hassled about sticking to your health concern treatment plan?	7 (10.3%)	14 (10.7%)
Do you often have difficulty remembering to take all your medications?	2 (2.9)	11 (8.4%)

Table 6: Cross table of causes of non-compliance with education level

Most of the patients (72.5%) did not report a cause for non-compliance. This may need in-depth qualitative analysis to identify any hidden cause and create a suggestion to improve oral hormonal therapy compliance. Musculoskeletal symptoms are the commonest reported side effect of the medication. Close follow-up with a personal visit or phone call is recommended to increase compliance to medication and reeducate the patient about the medication's benefits and side effects.

Conclusion:

The self-reported nonadherence to oral hormonal medication is (41,22%) lower than the average of developing countries. The majority of the patients did not report (725%) specific causes for non-adherent to medication. Close follow-up is recommended increasing compliance to medication.

Limitation of the study:

Patients who lost the follow-up at the clinic were not included in this study. Measuring non-compliance is subjective based on self-reporting. This is a single-center study in Oman; we need a multi-center study to include urban and rural areas with a large sample size.

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