



EVALUATION OF NIPPLE DISCHARGE IN WOMEN ATTENDING AL-ELWYIA
TEACHING HOSPITAL, BAGHDAD, IRAQ

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ABSTRACT

Background: Nipple discharge, while often causing anxiety, is usually benign or physiological, accounting for 2-5% of breast cancer clinic referrals. Physiological discharge is often bilateral, emerging from multiple ducts, and can be clear, white, yellow, green, or brown. It's important to note that nipple discharge can be the initial symptom in 5-15% of breast cancer cases. Sometimes, this discharge can be induced by manipulation of the breast or nipple. The study aims to identify common nipple discharges related to serious breast diseases, differentiate between physiological and pathological discharges, analyze the age distribution of affected women, and explore the relationship between nipple discharge and breast carcinoma. **Method:** Cross-sectional retrospective research of 100 female nipple discharge patients from November 2022 to June 2023 at Al-Elwiyia Teaching Hospital. The research included all females with breast illnesses and discharged but omitted those with breast lactation. All female data collected: age (years), breast discharge side (bilateral, left or right). Also questioned about mass feeling, ache in the breasts. Any family history of breast cancer, and lastly what the expert diagnostic and discharge reasons are, benign or malignant. **Results:** In a study of 100 females with breast disease, the mean age was 41 years, with a higher prevalence of benign conditions in those presenting with clear, green, or white nipple discharge. Bloody nipple discharge, seen in 28% of cases, was significantly associated with breast masses and a higher likelihood of breast carcinoma diagnosis. No significant correlation was found between discharge color and patient age, breast pain, or family history, but there was a notable association between discharge side and breast mass presence. **Conclusion:** Nipple discharge occurs in various age groups, with bloody discharge linked to higher malignancy risk, especially when combined with a breast mass, whereas clear, green, or white discharges typically suggest benign conditions. Accurate diagnosis and management require a comprehensive, multi-faceted approach, regardless of the discharge's characteristics.

KEYWORDS: Evaluation, nipple, discharge, women, attending, Al-Elwiyia teaching hospital.

INTRODUCTION

Nipple discharge, a common clinical presentation, is a significant cause for referrals to breast cancer clinics, accounting for 2-5% of all cases.^[1] While it often induces anxiety among patients, most instances of nipple discharge are either physiologic or stem from benign causes.^[2] Yet, its importance cannot be underestimated. In fact, nipple discharge has been identified as the initial symptom in up to 15% of breast cancer cases, albeit with a variation ranging from 5% to 15%.^[3]

Physiologic discharge is generally recognized as bilateral and can emerge from multiple ducts. Such discharges

usually do not exhibit bloody characteristics, and can manifest in an array of colors including clear, white, yellow, green, or brown. Notably, the discharge can sometimes be prompted by the manipulation of the breast or nipple.^[4] A specific type of discharge, termed galactorrhoea, is physiological and is seen during pregnancy or breastfeeding. Beyond these scenarios, galactorrhoea may arise due to hyperprolactinemia, thyroid disease, or the influence of certain medications that inhibit dopamine, indicating a potential endocrine origin.^[5] Contrastingly, pathologic discharge predominantly appears spontaneously, is unilateral in nature, and often presents as serous, clear, or bloody.^[6] This type of discharge might also co-exist with a breast

mass.^[7] Delving into the causes of pathologic discharge, benign papillomas top the list, accounting for 57% of such presentations.^[8] Papillomas are notable for producing either bloody or clear discharge and may be linked with low-grade carcinomas or the presence of atypical cells.^[9] Duct ectasia follows, observed in 33% of patients with pathologic discharge.^[9] Alarming, malignancies like ductal carcinoma in situ are detected in 5–15% of individuals exhibiting pathologic nipple discharge.^[3,10] Breast cancer, in its essence, is predominantly constituted by invasive ductal carcinomas. Other variants like lobular invasive carcinomas or seldom-seen invasive cancers, such as Phylloides tumours, form the remainder. An essential subset to consider is the Carcinoma in situ (CIS), which, while non-invasive, follows the same pathological pattern with a chiefly ductal origin. The intrinsic nature of CIS poses a risk, as it holds the potential to progress to invasive cancers.^[10] Addressing nipple discharge demands a comprehensive approach. Regrettably, there is an observed inconsistency in its evaluation and management across various healthcare departments and nations.^[11] The crux of any assessment lies in distinguishing between physiologic and pathologic discharges. The goal is twofold: to prevent women from undergoing unwarranted surgical interventions and to ensure timely and appropriate treatment for those at a heightened risk of invasive cancer. Customary evaluations encompass a thorough medical history, a meticulous physical examination, and, if indicated by symptoms or findings, a radiographic examination, which may include mammography or ultrasonography.^[12] Though ductography and ductoscopy have seen use in cases of active discharge, their reliability in differentiating between benign and malignant origins remains questionable.^[13] Future diagnostic evaluations might lean on Magnetic Resonance Imaging (MRI) for its capacity to discern occult pathologies. However, the definitive role of MRI

in evaluating nipple discharge is yet to be firmly established.^[14] The aims of the study are to determine the most common nipple discharge that related to a serious breast diseases and distinguish between physiologic and pathologic nipple discharge, and the age of women with discharge, and to know the relationship between nipple discharge and breast carcinoma.

METHOD

Cross sectional retrospective study of 100 females with nipple discharge collected from Al-Elwyia teaching hospital from November 2022 to June 2023. We included in study all females have breast diseases and discharged while excluded all females with breast lactation also---- All female's data that collected are: age (years), Side of discharge either Bilateral, left or right breast. Also asked if any mass feeling, presence of breast pain (mastalagia). Any previous family history of breast carcinoma, and finally seen what the professional diagnosis and causes of discharge either benign or malignant. SPSS 22 was used for the statistical analysis. For categorical data, frequency and percentage were employed, while mean, median, and SD were used for continuous data. Chi-square is used to evaluate the relationship between category variables. Significant is defined as a P-value of 0.05 or less.

RESULTS

The data of 100 females with breast disease collected, the mean age of patients 41 ± 13 years old. 47% of females at age group 18-39 (young adult), 43% of females are middle age (40-59) years. 35% of females have discharge from left breast and 33% bilateral breast discharge. Just 41% of patients have breast mass, 56% of females have breast pain, just only 18% of females have family history of breast cancer, only 16% of females from current study diagnosed as malignant breast disease. As shown in table 1.

Table 1: Distribution of patients according to study variables.

Variables		Frequency (no.)	Percentage (%)
Age groups (years)	<i>young adult (18-39)</i>	47	47.0
	<i>middle age (40-59)</i>	43	43.0
	<i>Old (≥ 60)</i>	10	10.0
Side	<i>Bilateral</i>	33	33.0
	<i>LT</i>	35	35.0
	<i>RT</i>	32	32.0
Presence of mass	<i>Yes</i>	41	41.0
	<i>No</i>	59	59.0
Diagnosis	<i>Benign</i>	84	84.0
	<i>malignant</i>	16	16.0
Mastalagia	<i>Negative</i>	44	44.0
	<i>Positive</i>	56	56.0
Family History	<i>Negative</i>	82	82.0
	<i>Positive</i>	18	18.0

As shown in fig 1; 29% of females present with white nipple discharge, 28% of them present with bloody

nipple discharge while 23% and 20% of females present as green, clear discharge respectively.

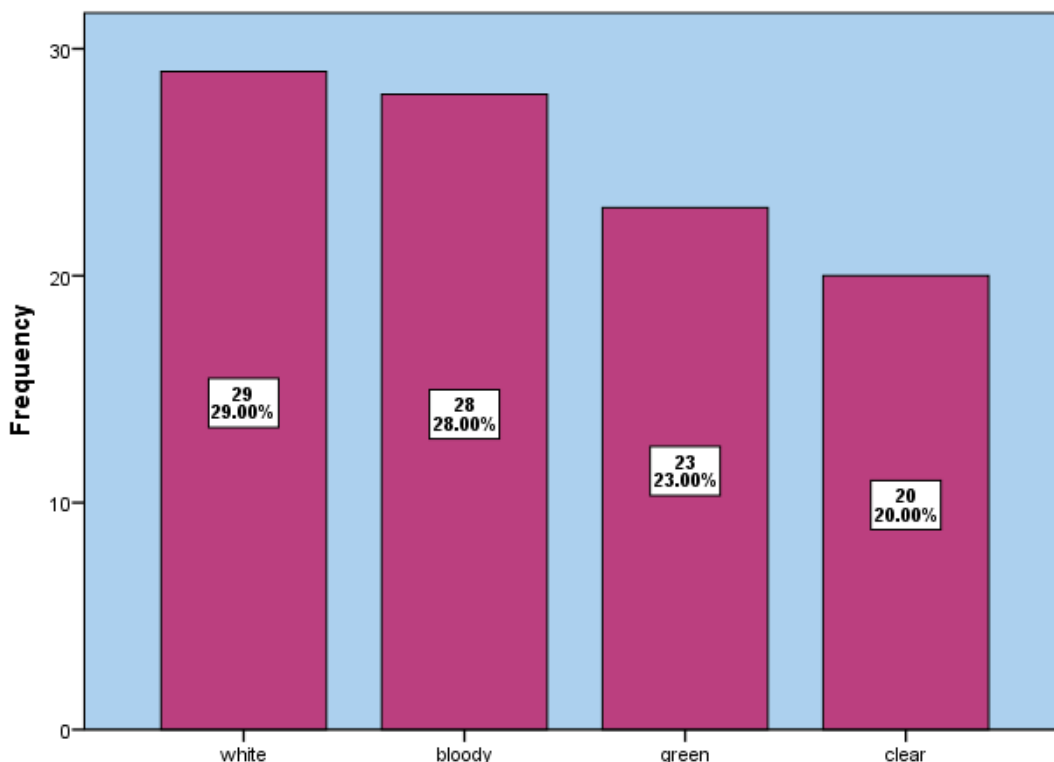


Fig. 1: Distribution of patients according to color of breast secretion.

As shown in table 2; there is significantly 71.4% of females present with bloody discharge are associated with mass in breast. 57.1% of females present with bloody discharge later on diagnosed as breast carcinoma while 100% of females present with clear, green and

white discharge have benign breast disease. No significant association between color of discharge and age of females, side, family history of breast disease and pain in breast.

Table 2: association between color of discharge and study variables.

Variables		Color				P-value
		Bloody	Clear	Green	White	
Age groups	Young adult (18-39)	10	7	13	17	0.11
		35.7%	35.0%	56.5%	58.6%	
	middle age (40-59)	12	11	8	12	
		42.9%	55.0%	34.8%	41.4%	
	Old ≥60	6	2	2	0	
	21.4%	10.0%	8.7%	0.0%		
	Total	28	20	23	29	
		100.0%	100.0%	100.0%	100.0%	
Side	Bilateral	3	8	7	15	0.052
		10.7%	40.0%	30.4%	51.7%	
	Left	13	6	7	9	
		46.4%	30.0%	30.4%	31.0%	
	Right	12	6	9	5	
	42.9%	30.0%	39.1%	17.2%		
	Total	28	20	23	29	
		100.0%	100.0%	100.0%	100.0%	
Shape	Mass	20	5	7	9	0.002
		71.4%	25.0%	30.4%	31.0%	
	No mass	8	15	16	20	
		28.6%	75.0%	69.6%	69.0%	

	Total	28 100.0%	20 100.0%	23 100.0%	29 100.0%	
Types	Benign	12 42.9%	20 100.0%	23 100.0%	29 100.0%	0.0001
	Malignant	16 57.1%	0 0.0%	0 0.0%	0 0.0%	
	Total	28 100.0%	20 100.0%	23 100.0%	29 100.0%	
Mastalgia	Negative	9 32.1%	8 40.0%	14 60.9%	13 44.8%	0.2
	Positive	19 67.9%	12 60.0%	9 39.1%	16 55.2%	
	Total	28 100.0%	20 100.0%	23 100.0%	29 100.0%	
Family history	Negative	24 85.7%	16 80.0%	19 82.6%	23 79.3%	0.9
	Positive	4 14.3%	4 20.0%	4 17.4%	6 20.7%	
	Total	28 100.0%	20 100.0%	23 100.0%	29 100.0%	

P-value ≤ 0.05 (significant)

As shown in table 3; there is significant association between side of nipple discharge and (shape, types). 65.6% of females have right nipple discharge come with

mass while 48.6% of female have left nipple discharge come with mass. Also 100% of bilateral nipple discharge diagnosed as Benign breast mass while 80% of left nipple discharge are also Benign.

Variables		Side			P-value
		bilateral	LT	RT	
Shape	Mass	3 9.1%	17 48.6%	21 65.6%	0.0001
	No mass	30 90.9%	18 51.4%	11 34.4%	
	Total	33 100.0%	35 100.0%	32 100.0%	
Types	Benign	33 100.0%	28 80.0%	23 71.9%	0.006
	Malignant	0 0.0%	7 20.0%	9 28.1%	
	Total	33 100.0%	35 100.0%	32 100.0%	

P-value ≤ 0.05 (significant).

DISCUSSION

The study findings provide valuable insights into the characteristics and correlations of nipple discharge in relation to various clinical and demographic variables. Understanding these patterns is paramount for clinicians in providing timely and effective care to patients. Age appears to play a noteworthy role. With a mean age of 41 ± 13 years for our patient, it's evident that nipple discharge is a prominent symptom not only among post-menopausal women but also in younger adults. In fact, 47% of females were in the age group of 18-39 years, and 43% were middle-aged, between 40-59 years. These statistics are in line with previous studies which highlight that breast symptoms, including nipple discharge, span across a wide age range.^[15] The broad age distribution emphasizes the need for healthcare professionals to

remain vigilant across varying age groups. Considering laterality, 35% of females reported discharge from the left breast, with 33% reporting bilateral discharge. These numbers, though intriguing, mirror the observations of Panzironi G et al.^[16] who found no strong lateral predilection of nipple discharge in their comprehensive review. A notable 71.4% of patients with bloody discharge also had an associated breast mass. Clark SE et al.^[17] established a clear link between bloody discharge and an elevated risk of malignancy, especially when a breast mass was palpable. This is further corroborated by our finding that 57.1% of those with bloody discharge were eventually diagnosed with breast carcinoma. On a reassuring note, participants with clear, green, or white discharge were diagnosed with benign breast diseases, a trend consistent with the work of de Paula et al.^[18] Their study suggested that these discharge colors are more

indicative of benign conditions such as duct ectasia or fibrocystic changes. Interestingly, despite 56% of females reporting breast pain, our findings indicate no significant association between discharge color and pain. This resonates with the conclusions drawn by Ryerson AB et al.^[19] where breast pain, though a frequent symptom, did not have a direct correlation with the nature (benign or malignant) of nipple discharge. Furthermore, our results did not demonstrate a significant association between the color of discharge and other factors such as age, side of discharge, family history of breast disease, or presence of breast pain. These findings are in line with the comprehensive review by Bergin RJ et al.^[20] emphasizing that while these factors are important in a breast cancer risk assessment, they might not directly influence the color presentation of nipple discharge.^[21] Our data indicates a predominant trend of right nipple discharge being associated with the presence of a mass, with 65.6% of females showcasing this pattern. Conversely, only 48.6% of females exhibited a mass with left nipple discharge. This lateral predilection, especially the predisposition of the right breast towards having a mass, is intriguing. While the underlying cause for this disparity remains elusive, a study by Filipe et al.^[22] observed similar findings, suggesting potential anatomical, physiological, or genetic influences. The strong association between bilateral nipple discharge and benign diagnoses is particularly remarkable. In our study, all cases of bilateral nipple discharge were diagnosed as benign breast masses. This observation can be an essential pointer for clinicians in differential diagnosis, providing reassurance to patients even before further investigations. Stachs et al.^[23] found similar trends, indicating that bilateral manifestations of breast symptoms are more frequently benign. Furthermore, the finding that 80% of left nipple discharges are benign adds another layer of complexity to the understanding of nipple discharge. This emphasizes the importance of a thorough clinical evaluation, as a left-sided discharge does not always suggest malignancy. Ohlinger et al.^[24] highlighted the multifaceted nature of breast symptoms, noting that while certain patterns emerge, each patient's presentation is unique, necessitating individualized assessment and care.

CONCLUSION

In conclusion, nipple discharge manifests across diverse age groups, with distinct patterns related to color and associated breast conditions. Bloody discharge, especially when paired with a breast mass, heightens malignancy risk, while clear, green, or white discharges predominantly indicate benign etiologies. A holistic, multi-faceted assessment is imperative for accurate diagnosis and management, irrespective of the discharge's presentation.

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