

Availability and Types of Pressure Ulcer Medications at Community Pharmacies in the Accra Metropolis of Ghana

Grace Lovia Allotey-Babington¹; Irene Akwo Kretchy²; Isaac Julius Asiedu-Gyekye³; Maame Kyiafi Oppong-Beniako¹, Obed Kufoalor¹; Gilnel Adjei Adjete¹; Michael Agyapong Mintah¹; and *Henry Nettey¹

¹ Department of Pharmaceutics and Microbiology, School of Pharmacy University of Ghana, P.O. Box LG 43 Legon, Ghana.

² Department of Pharmacy Practice and clinical Pharmacy, School of Pharmacy University of Ghana, P.O. Box LG 43 Legon, Ghana.

³ Department of Pharmacology and Toxicology, University of Ghana School of Pharmacy, Legon, Ghana, P.O. Box LG 43 Legon, Ghana

Abstract

Pressure ulcers (PU) arise from prolonged pressure on the skin and underlying tissue due to pathological changes in blood flow. They usually develop in people who are immobilized due to certain medical conditions. The incidence of chronic diseases such as cancer, cardio-vascular diseases are on the ascendency. These conditions, if not managed adequately could render patients incapacitated, leaving them bedridden for long periods. The chances of these individuals developing PU are very high. Currently in Ghana, information on medications for the management of various stages of PU are not readily available. Prevention of PU has been the goal of nursing care, however, in the case where preventive care is not successful, there should be effective and efficient medications for the management of the PU. *Method:* The study design was descriptive cross-sectional. To get a good representation of the availability of PU medications in the entire metropolis, a stratified sampling approach was used. The 10 districts within the metropolitan area were taken as the strata. Towns within each district were identified, and mapped out. From each town, community pharmacies were randomly selected. It was ensured that pharmacies selected were well spread out (located distance apart). Researchers had to collect data from three or more pharmacies from each town. Data was collected using a structured questionnaire from pharmacists working in these pharmacies. By this approach, the availability of PU medications across the entire metropolitan area was revealed. *Results:* 241 pharmacies were visited, out of which 192 respondents took part in the study. Approximately 83.3% of these pharmacies had pressure ulcer medications. Majority of the medications available in the community pharmacies visited were hydrophobic based dressings, while hydrophilic based dressings were less than 1%. Implying that patients having PU that produce scopious exudate will have challenges acquiring the necessary dressings to manage the wounds. The dressings which were mostly available, had other indications apart from Pressure Ulcer. Patronage of the available PU medications in the Accra metropolis was average. *Conclusion:* There are pressure ulcer medications available in pharmacies within the Accra metropolis of Ghana. Although the medications are averagely patronized, there are not many types available. Hydrophilic based dressings were not readily available.

Keywords: Pressure Ulcer, Hydrophilic-based dressings, hydrophobic-based dressings.

Introduction

Pressure Ulcers (PU), also known as bedsores or decubitus ulcers are injuries to skin and underlying tissue resulting from prolonged pressure on the skin. These sores develop due to persistent pressure on specific areas of the body when a person stays at one position for a long time¹. Sores can also emanate from significant pressure over a short period. Unlike acute wounds, pressure sores develop in deeper skin layers and then advance to superficial layers of the skin².

Management and treatment of PU may vary from one patient to another depending on the size of the ulcer, its stage, and its associated complication³. Interventions such as protection and promotion of wound healing, treatment of infection and surgical repair damage^{4 5 6} are used in the treatment and

prevention of PU. Another important preventive measure is to redistribute pressure at the interface between the skin and the support surface⁷. In treating PU, dressings, creams and ointments, and antibiotics are used^{8 9}. There are different types of dressings, and these include alginate dressings, foam dressings, hydrocolloid dressings, hydrogels and gauze dressings. Each of these has its mechanism of action on the PU. Products with hydrophilic bases are normally used for PU at stages 3 and 4 where there is an appreciable wound drainage. They are not used on wounds which are dry or have a low drainage as they can cause dehydration and slow down the healing process. The hydrophobic-based dressings mostly serve as wound protectors and are used for wounds with minimal exudates¹⁰.

The incidence of diseases like cancer, cardio-vascular diseases and other chronic illnesses are on the ascendency^{11 12}. These conditions could render patients incapacitated, leaving them bedridden for long periods. The chances of these individuals developing PU are very high. Pressure ulcers can have a significant socioeconomic impact on a person, the healthcare system, and society at large^{13 14}. They have a major financial impact due to the high healthcare expenses associated with specialized wound care and extended hospital stays^{15 16 17}.

Corresponding Author:

Henry Nettey

Department of Pharmaceutics and Microbiology

School of Pharmacy University of Ghana

P.O. Box LG 43 Legon, Ghana

Email: hnettey@ug.edu.gh

Additionally, pressure ulcers can result in a decline in quality of life, a loss of independence, and an increased burden on caregivers.

Prevention of PU has been the goal of nursing care for a long time and research has been made to identify evidence-based guidelines¹⁸. However, in the case where preventive care is not successful, there should be effective and efficient medications for the management of the PU¹⁹. Previous studies on PU in Ghana have focused on preventative measures and on intervention by nurses²⁰⁻²². Information on medications for the management of PU is not readily available. Thus, this research sought to determine the type, availability and extent of use of medications for the management of PU in community pharmacies in the Accra metropolis.

Methods

A cross-sectional study design was used to determine the scope of medications available in community pharmacies located in the Accra Metropolis. Data was collected using a structured questionnaire.

Ethical Considerations

The study involved interactions with pharmacists in selected community pharmacies, who were enrolled as participants of the study. To ensure that their rights were not abused, the Institutional Review Board had to scrutinize the study procedure and review the questionnaires used for the study. Ethical approval was acquired from the Noguchi Memorial Institute of Medical Research, Legon. Ethical approval number: NMIMR-IRB CPN 068/22-23

Study Sites and Study Population for the Survey

The study sites for the survey were the community pharmacies in the Accra metropolis. These facilities are usually the first point of call by patients in the community and they are mainly privately owned. These pharmacies are usually found in the locality of the patients, offering them medications, advice and other health related services. The population of interest were the pharmacists in community pharmacies within Accra Metropolis.

Inclusion and exclusion criteria

Inclusion criteria: Pharmacists working in community pharmacies situated within the chosen districts. Pharmacists who had worked for not less than one year.

Exclusion criteria: Staff of selected pharmacies who are not pharmacists (Pharmacy Technicians and Medicine Counter Assistants). Pharmacies located outside the Accra metropolis.

Sampling and Data Collection Procedure

A stratified sampling approach was used to select pharmacies from which respondents were enrolled in the study. Accra Metropolis consists of 10 districts. Each of these districts is made up of 4 – 6 suburbs/towns. The towns within each of

these districts were identified and mapped out. An average of 3 pharmacies were selected from each town within the above-mentioned districts. The scope of medications varied from one community pharmacy to the other probable because of the socioeconomic status of people living within the districts. Implying that some districts were deprived than others. Thus, the stratified sampling approach was used to give a good representation of the availability of PU medications in the entire Accra metropolis. By this technique, data collected was representative of PU medications across all ten districts of the Accra metropolis.

At the pharmacies, pharmacists received a briefing about the project after which they were given the opportunity to partake in the survey or to decline. Pharmacists who responded in the affirmative signed consent forms. A structured questionnaire that had both open-ended and closed-ended questions then handed to the respondents. The questionnaire sought information on the availability of PU medications at the facilities visited. Respondents were subsequently asked to provide a list of the PU medications they had available at the time of visit. As part of the questions, respondents had to state other indications of the PU medications they listed. The last section of the questionnaire had a list of medications and respondents had to indicate the ones they had available in their facility (The list of medications provided for this question were recommended medications for the management all 4 stages of PU however, use/indication of the medications was not provided on the questionnaire). At sites where pharmacists were absent, appointments were scheduled to interact with them at a later date and time. This was to ensure that the respondents were all pharmacists.

Statistical Data Analysis

Data entry was done in Microsoft Excel. For categorical variables, descriptive statistics reported were mode, frequencies and percentages.

Results

There were 241 community pharmacies visited in the Accra metropolis. A response rate of 79.7% (192 pharmacies) was achieved. This high response rate positively impacts the quality of the data. It indicates that the data obtained is a good representative of the population and reveals the availability of PU medications in the Accra metropolis. Out of the 192 responses, 83.3 % indicated that they had PU medications in their facilities incomprehensively.

Medications listed by respondents that could be used for the management of PU are presented in **Table 1**. Only 6 (40%) of the medications listed by respondents are used for the management of PU. These were silver sulfadiazine sudocream, Papain + urea cream (debridace), vaseline gauze, zinc oxide cream silver sulfadiazine cream. Thus, 60% of the medications listed by respondents were not indicated for PU.

To assess the extent of use of the medications listed, respondents were asked to indicate on a scale of 1 to 10 the patronage of these products at their pharmacies. Where a score of '1' was the least patronized and a score of '10' corresponded to the most patronized. Results are presented in **Figure 1**. The mode of the data set is 5; indicating that patronage of the medications listed by consumers is average. **Table 2** contains a list of conditions that the commonly available medications could be used for. Inferring that the medications that could be used in the management of many different conditions were readily available than the ones that were solely for PU. To confirm this fact, medications indicated solely for PU were listed for respondents to select the ones they had available in their facilities. Data obtained is presented in **Figure 2**.

The medications on the questionnaire were: silver sulfadiazine, vaseline gauze, cutimed gel, alginate dressings, hydrocolloid dressings, mefamide acetate and others. Silver sulfadiazine was the most common medication. It was available in 160 pharmacies (83.3%) followed by vaseline gauze having a frequency of 121 (63.0%). Cutimed gel dressing, Alginate dressings, hydrocolloid dressings and mefamide dressings which are hydrophilic based dressings had frequencies of 0.08%, 0.05% 0.05%0.04% respectively. Thus, there were very few hydrophilic-based dressings. The hydrophilic based dressings were found to be much more expensive than the more commonly available medications. Additionally, the few hydrophilic medications mentioned above were documented from affluent districts.

Discussion

The findings of this study provided valuable insights into the availability of pressure ulcer medications at community pharmacies in the Accra metropolis. Out of 192 participants who participated in the study, 160 (83.3%) indicated that they had PU medications in their facility. Upon analysis of the medications the respondents listed, only 40% were indicated for PU (**Table 1**). Suggesting that most of the respondents were not very conversant with the medications used in the management of PU. It is recommended that management of the Pharmacy professional body of the jurisdiction in which the study was conducted consider pressure ulcers as one of the subject areas to covered when planning continues education sessions for Pharmacists.

From **Figure 1**, the medications listed by respondents are averagely patronized in the Accra metropolis. However, these medications are not solely for managing PUs. Other indications for these medications are listed in **Table 2**. It can thus be deduced that patronage of PU alone will be lower than the score of 5 indicated by respondents. From **Figure 2**, it was established that silver sulphadiazine was available in 83.3% while that of vaseline gauze was 63%. The majority of the pharmacies stocked silver sulphadiazine and vaseline gauze,

which are not absorbent dressings. These two types of medications are recommended for the initial stages of PU. Among the listed medications that respondents had to indicate availability, two (2) could be classified as hydrophobic while the others were hydrophilic based. Results from figure 2 indicated that, availability of each of the hydrophilic-based medications was less than 1%. Cumulatively, 18.8% (36 out of the 192) of facilities visited had at least one of the medications: cutimed gel, mefamide acetate cream, hydrocolloid and alginate dressings. Hydrophilic-based dressings have the ability to absorb wound exudate explaining why they are used in the mid-to later stages of PU. The results of the survey indicated that hydrophilic-based dressings were not readily available at pharmacies in the Accra metropolis. This very low availability of medications has implications for patient care. Patients who have PUs with copious exudate (third and fourth stages) will have difficulties acquiring their medications. This is complicated by the fact that prices of products which are not readily available tend to be high. Improper management of PU could lead to infected wounds and many other complications that will reduce the quality of life of patients.

Thus, with the increase in prevalence of cancer and other diseases that predispose people to develop PU, the availability of all the various types of PU medications is highly recommended to ensure that wounds of all types are adequately managed.

Conclusion

There are pressure ulcer medications available in pharmacies within the Accra metropolis of Ghana. Although the medications are averagely patronized, there are not many types available. Hydrophilic based dressings (that have the ability to absorb exudate from pressure ulcers) were not readily available.

It is recommended that the institutions responsible for health policy should take decisions that will make hydrophilic-based dressings for PU readily available. Secondly, researchers and pharmaceutical manufacturers should develop effective hydrophilic-based dressings which are less expensive.

Data Availability

Data will be made available upon reasonable request.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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Table 1: Medications for PU as listed by Pharmacists.

Medications listed by pharmacists	Number of Pharmacies
Zinc oxide, Lanolin + Emulsified water in oil cream (sudocream)	33
Silver Sulfadiazine Cream	160
Povidone iodine + metronidazole (solution, powder, ointment)	35
Papain + Urea cream	17
Bacitracin zinc + Neomycin + Polymyxin ointment	30
Povidone Iodine Solution	1
Zinc Oxide Ointment USP	9
Mupirocin Ointment	14
Aqueous Extract of Shorea Robusta + Azadirachta Indica + Pongamia Pinnata + Cassia Tora Cream	6
Vaseline Gauze	121
Miconazole Cream	2
Bacitracin Zinc + Polymyxin Ointment	4
Diclofenac Gel	1
Magnesium Hydroxide + Aluminium Hydroxide + Dimethicone + Magnesium Trisilicate	1

*Generic names of drugs have been used

Table 2: Off-label Indications of Pressure Ulcer Medications

Other indications for medications listed by respondents
Burns
Eczema
Diaper rash
Cuts
Sores
Wounds
Surgical wounds

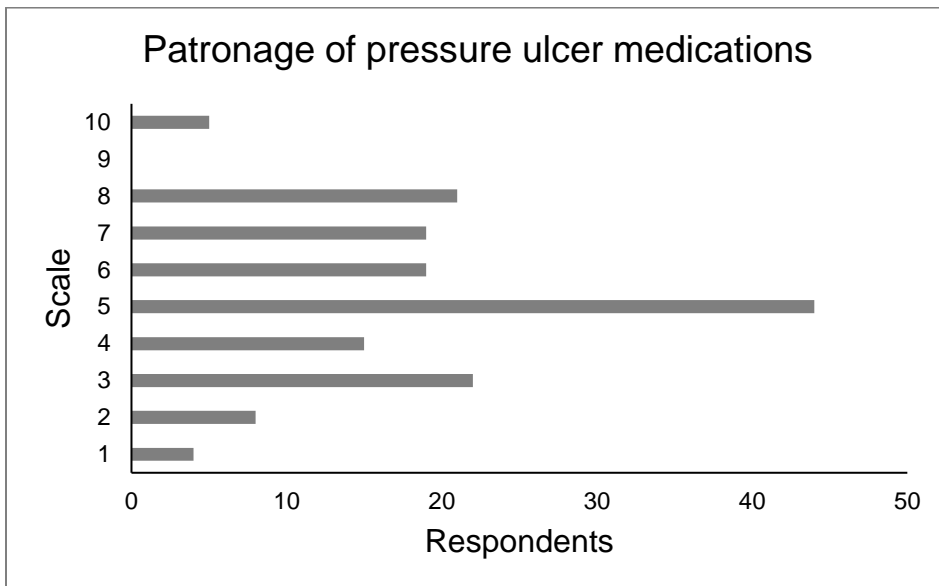


Figure 1: Chart indicating the patronage of the medications listed by respondents.

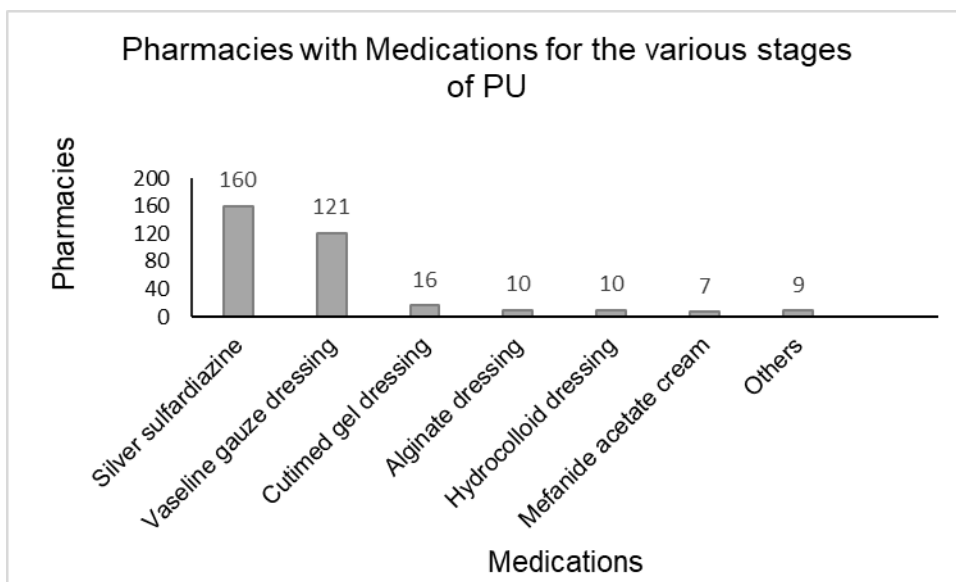


Figure 2: Chart indicating the pharmacies that had specialized medication for all the stages PU.