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The role of the community pharmacist in providing instructions needed to patient with stroke

A Graduation research submitted to College of Pharmacy,
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in Partial Fulfillment of the Requirements for The Degree of
Bachelor in Pharmacy

Done by

Ali Hamza Kamil

Aliaa Khalid Jameel

Supervised by

Dr. Safaa Ganduh

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﴿ اقْرَأْ وَرَبُّكَ الْأَكْرَمُ* الَّذِي عَلَّمَ بِالْقَلَمِ* عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ﴾

سورة العلق - الأية (٣-٥)

Supervisor Certificate

I certify that this project

“The role of the community pharmacist in providing instructions needed to patient with stroke”

was prepared under my supervision at the College of Pharmacy, Al-Qadisiyah University as a graduation research

Dr. Safaa Ganduh

signature

Date: (/ / 2018)

Dedication

To my lovely father,

My great mother,

my family and professors,

and to all who quench homeland with their blood to make us live peacefully.

Ali Hamza

Aliaa Khalid

Acknowledgements

First of all, thanks God for helping me in performing this work.

I would like to introduce my deepest thanks to my supervisor Dr. Safaa Ganduh for his guidance and kindness throughout the study.

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Abstract

The objective behind this research is to determine the role of community pharmacist in providing the instructions needed to patient with stroke. It included Participants as samples of community pharmacists in Al-Diwaniyah teaching hospital and stroke patients who had been admitted to the hospital.

The Main outcome measure was to explore the extent to which the community pharmacist has a significant role in giving needed information to a patient with stroke.

Where the results showed a prominent role played by the community pharmacist in giving important information needed by the stroke patient, including the details of treatment, whether peaceful way to eat or alert to everything related to him, which is in the best interest of the patient at the end.

Through a variety of interventions and monitoring, it was concluded that community pharmacists can make a significant and effective contribution, both in acute stages of illness or in rehabilitation, to the care of a stroke patient in collaboration with the stroke team.

However, the success of these interventions depends on building effective communication channels with the various health care professionals involved in the stroke team.

Chapter One

Introduction and Literatures Review

1.1-Stroke

Stroke or cerebrovascular accident (CVA) is defined as sudden interruption of the blood supply to the brain.[1]
It's a serious medical condition that occurs when the blood supply to part of the brain is stopped.[2]

Like all organs, the brain needs the oxygen and nutrients provided by blood to function properly. If the supply of blood is restricted, brain cells begin to die. This can lead to brain damage, long term disability and possibly death. Sudden bleeding in the brain also can cause a stroke if it damages brain cells.[3],[4]

Most strokes are caused by an abrupt blockage of an artery (ischemic stroke). Other strokes are caused by bleeding into brain tissue when a blood vessel rupture (hemorrhagic stroke).[5]

The effects of a stroke depend on the severity and which area of the brain is injured. Strokes may cause sudden weakness, loss of sensation, or difficulty with speaking, seeing or walking and thinking.[4],[5]

Because different parts of the brain control different areas and functions, it's usually the area directly surrounding the stroke that is affected. Strokes are a medical emergency and immediate treatment is essential because the damage less likely to occur sooner the patient with stroke is treated.[6],[7]

1.2-Classification of stroke

The main classifications of stroke are listed in figure (1.1)

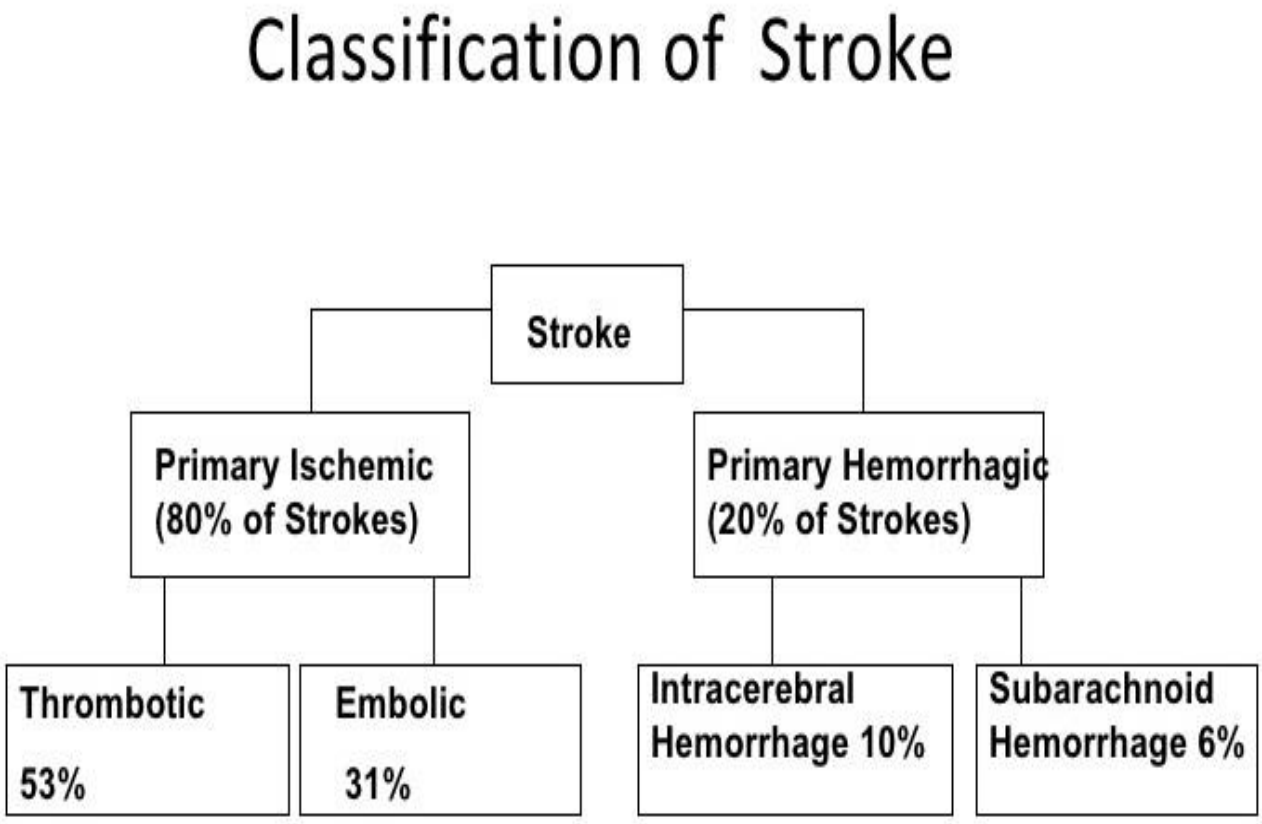

Figure (1.1): Classifications of Stroke

1.2.1-Ischemic Stroke

Ischemic stroke, when the blood supply to part of brain is reduced that may cause dysfunction of the brain tissue in that area.
Represent (80% of cases).

It may be due to a blockage of an artery from a blood clot (thrombus) or from clogged blood vessels (atherosclerosis), Cholesterol plaques are deposited within the walls of the arteries, narrowing the inside diameter of the artery.[8],[9],[10]

As the artery narrows, less blood is able to pass to the brain and BP raise to meet the demands of the body. Clot buildup in large blood vessels of the neck and base of the brain.[10]

The reasons of ischemic stroke:

1. Thrombosis (blood clot forming a blood vessel obstruction).

2. Embolism (embolus from elsewhere in the body cause obstruction).

3. Systemic hypoperfusion (e.g., in shock).

1.2.2-Transient Ischemic Attack

Transient ischemic attack (TIA) cause a stroke due to temporary fall in blood Supply to part of the brain, leading to a lack of oxygen to the brain. This can cause symptoms that are similar to stroke.[11],[12]

TIA lasts only a few minutes and is usually resolved within 24 hours. Thus, damage to the brain cells isn't permanent (lasting). TIA should not be ignored because TIA is a serious warning sign that there is a problem with the blood supply to the brain.[11],[12],[13]

- 40 % of people who have a TIA will have an actual stroke.
- Half of all strokes happen within the first few days after a TIA.

١.2.3-Hermorrhagic Stroke

Is caused by the rupture of an artery either within the brain. Less common type of stroke (20% of cases) It can occur when a weakened blood vessel ruptures, releasing blood into the space surrounding the brain (subarachnoid hemorrhage SAH).[12],[13],[14]

Bleeding within the brain tissue itself called intracerebral hemorrhage (ICH). And is caused by hypertension that makes the tiny arteries to burst inside the brain.[14],[15],[16]

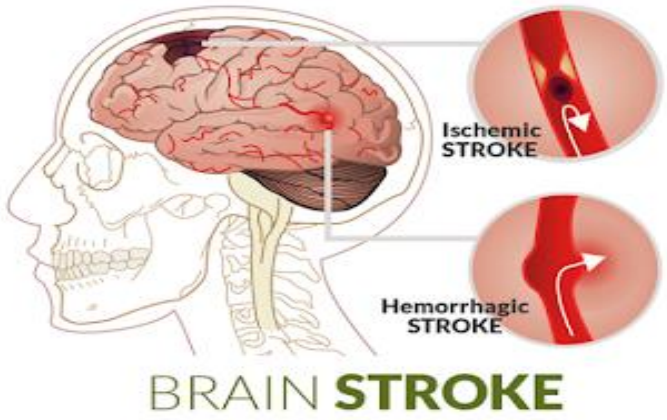

Figure (1.2): Ischemic and hemorrhagic strokes

1.3-Epidemiology

Stroke was the second most frequent cause of death worldwide in 2011, accounting for 6.2 million deaths (~11% of the total). [13],[14]

Approximately 17 million people had a stroke in 2010 and 33 million people have previously had a stroke and were still alive. Between 1990 and 2010 the number of strokes decreased by approximately 10% in the developed world and increased by 10% in the developing world.[14]

Overall, two-thirds of strokes occurred in those over 65 years old. Stroke categorized after heart disease and before cancer.[16],[17]

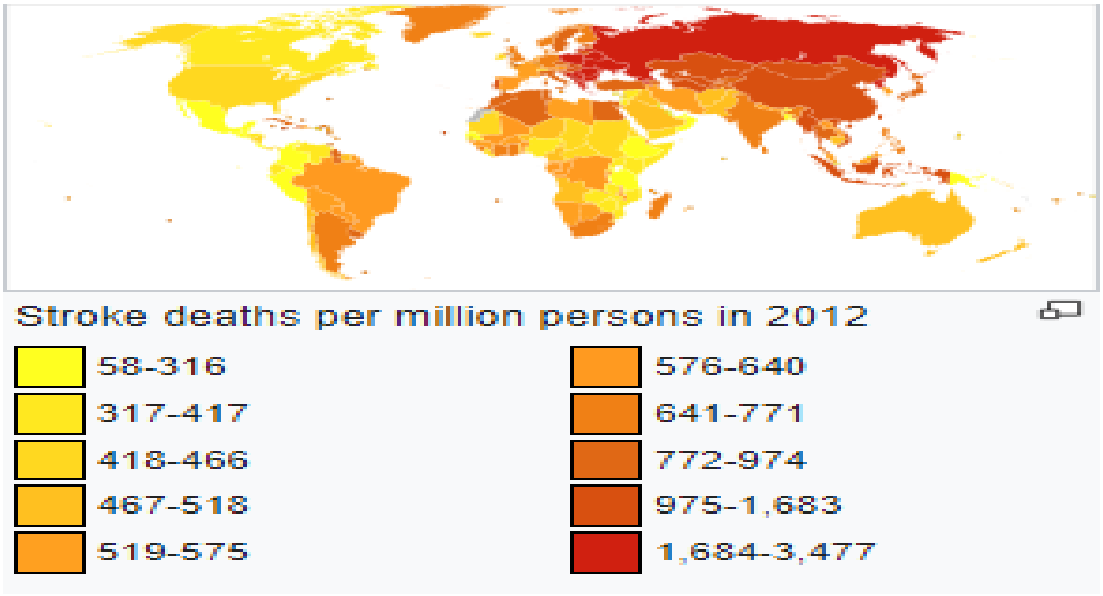

Figure (1.3): Epidemiology of stroke

1.4-Pathophysiology

1.4.1-Ischemic stroke:

When local thrombus formation (within brain) or emboli, where the clot form elsewhere in the body (often from the heart) and then travelled to the brain to occlude cerebral artery.[13],[14]

The final result is decreasing cerebral blood flow causing ischemia and infarction. Cerebral atherosclerosis is the cause in most cases. Carotid atherosclerosis plaque may be rupture, result in collagen exposure, platelet aggregation, and thrombus formation.[14],[15]

1.4.2- Hemorrhagic stroke:

It's occur when there is bleeding from the vessels within the brain (intracranial) or the vessel on the surface of the brain into the space between the skull and the brain (subarachnoid), subarachnoid hemorrhage result from trauma or ruptured blood vessel within the brain

Presence of blood in brain cause damage to tissue through a mass effect and neurotoxicity of blood components. Hemorrhage stroke can result in sudden increased intracranial pressure leading to herniation and death.[15],[16],17]

1.5-Risk factors for stroke

Risk factor is a certain traits, conditions, and habits can raise the risk of having a stroke or transient ischemic attack (TIA). [15],[16]

1.5.1-Non modifiable risk factors

that can't be changed, including:

- **Age:** the risk of stroke increase with age, Stroke is more common in people over 60 years old.
- **Gender:** men show a higher incidence of cerebral vascular disease than women.
- **Heredity or family history:** stroke is more common in people Whose close relatives have had stroke at an early age, e.g. mother, father.

- **Medical history:** the one who previously had a stroke, TIA or heart attack, the risk of stroke is higher.[14],[15]

1.5.2-Modifiable risk factors

can be controlled, including:

Hypertension:

High blood pressure is the main risk factor for stroke and heart disease. Blood pressure is considered high if it remains at or above 140/90 (mmHg) over time.[17],[18]

If diabetes or chronic kidney disease, high blood pressure is defined as 130/80 mmHg or higher. The damage that hypertension causes happens over time and is often only diagnosed when considerable damage has already occurred to the blood vessels.[18],[19]

The control of high blood pressure contributes to the prevention of a first stroke. Antihypertensive therapy is associated with a 35% to 44% reduction in the incidence of stroke.[19],[20]

Diabetes:

Is independent factor for stroke. Diabetic patient having high glucose in their blood, but their cells don't receive enough energy.[20]

Over time, this can lead to increased fatty deposits or clots on the insides of the blood vessel walls. These clots can narrow or block the blood vessels in the brain or neck, obstruct the blood supply, stopping oxygen from getting to the brain and causing a stroke.[21]

Another reason for the strong connection between diabetes and stroke is that some risk factors for stroke are also risk factors for diabetes. When two or more of the conditions present at the same time can increase the risk of both diabetes and stroke.[230],[21]

These conditions include: obesity, hyperglycemia, high blood pressure, and hypercholesterolemia.[21],[22]

Heart disease: coronary heart disease, cardiomyopathy, heart failure and atrial fibrillation that cause blood clot that can lead to stroke.[22]

Smoking: a major preventable risk factor for stroke and heart disease. It can damage blood vessels and raise blood pressure; smoking also may reduce the amount of oxygen that reaches your body's tissues.[23],[24]

1.5.3-Other risk factors:

Certain medical conditions, such sickle cell disease, vasculitis, bleeding disorders.

1.6-Signs and Symptoms

Sign and symptoms begin suddenly, as different parts of brain control different parts of the body, symptoms will depend upon the part of your brain that has been affected and the extent of the damage.[22],[23]

Usually affects one side of the brain. Movement and sensation for one side of the body is controlled by the opposite side of the brain.
Thus if stroke affected the left side of your brain, there will be problems with the right side of the body.[23],[24],[25]

These signs and symptoms include the following:

1. Sudden weakness, numbness or paralysis of the face, arm, or leg (Especially on one side of the body).
2. Sudden severe headache.
3. Loss of speech or trouble talking or understanding language.
4. Sudden loss of vision in one or both eyes.
5. Unexplained dizziness or loss of balance or coordination and falls.

6. Problems in breathing.
7. Confusion.
8. Loss of consciousness.

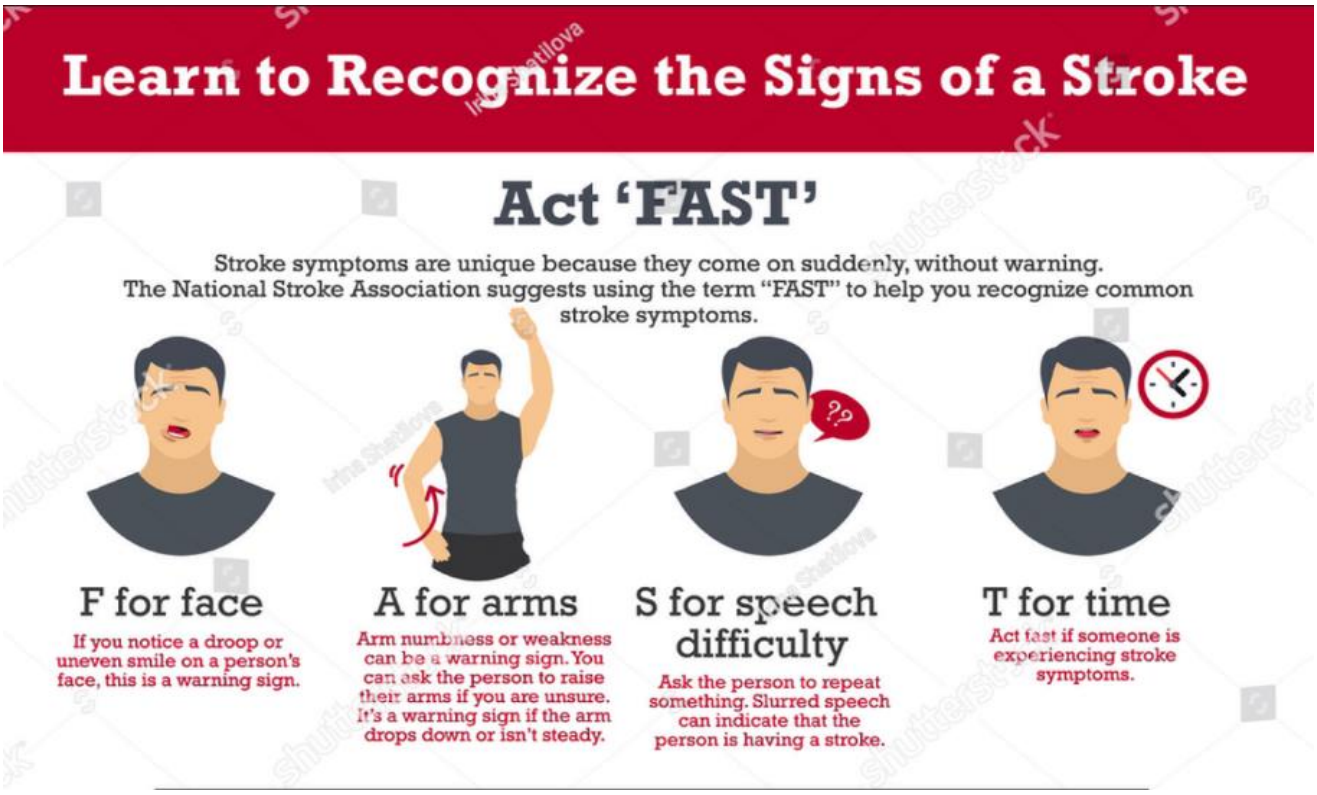

Figure (1.4): Signs and Symptoms

1.7-Diagnosis

When the patient is transported to the emergency room with an apparent stroke, the doctor will learn about the patient's symptoms, current and previous medical problems, current medications, and family history, physical examination is also performed.[23],[24],[25]

the procedures for diagnosis of stroke including:

1. Computed Tomography (CT)
3. Angiogram.
3. Magnetic resonance imaging (MRI)
4. Lumbar puncture

1.8-Prevention

Connection between stroke and cardiovascular disease is inseparable Of the 700,000 strokes suffered in the United States each year, about 200,000 are recurrent attacks.[22],[23]

To reduce the risk for getting stroke:

1. Take the medication every day as directed.

2. Regular medical checkup. Heart diseases, cholesterol and blood pressure should regularly check up by doctor and can be controlled by optimal treatment and lifestyle modification.[19],[20]
Checking blood pressure regularly especially in the adult is very important. Sometimes the hypertension is asymptomatic (silent killer) remain undiagnosed for years but can lead to long term disease and complication. If it remains elevated, taken antihypertensive drugs reduce the risk of developing stroke. In general it should be below 120/80 mmHg.[21],[22]

3. Eat a healthy diet of foods low in fat, cholesterol and salts.

4. Quit smoking.

5. Exercise regularly. Can help control weight, exercise at a moderate intensity at least five days in week this can done by: exercising at the level at which you're breathing hard, but you can still talk, Take the stairs instead of an elevator when you can, if you do not have 30 consecutive minutes to exercise, you can break it up into10- 15 minute sessions a few times each day.[18],[19]

6. Get enough sleep and reduce stress.[22]

7. Limit the use of alcohol. It's risky to drink alcohol when taken certain medication, talk to your doctor.[20]

8. Talk about your feelings. Sudden mood swings and depression are common after a stroke and diminished with time, a support group or counselor can help you and your family. [17]

1.9-Recovery

Each person's mental and physical deficits are unique. Someone who has a small stroke may experience only minor deficits, such as weakness of an arm or leg, while someone who has a larger stroke may be left paralyzed on one side or lose his or her ability to speak. Some deficits may disappear over time with healing and therapy.[21],[22]

The recovery process is long, and regaining function may take months or years. Rehabilitation professionals can help set up a treatment plan and helps loved ones understand the patient's needs for assistance with daily living activities.[17],[18]

Chapter Two

Patients and Methods

2.1-General Role of Pharmacist

Pharmacist's tasks, for example, dispense prescription medicines, prescribe over-the counter products, and provide health support, checking and advice to the public (e.g. educating on self-care), they also refer patients to other healthcare professional.[13],[14]

Pharmacists contribute with other healthcare providers in recommending drug therapy. Pharmacist must consider responsibility for assuring that the patient has been able to obtain the therapy, and is appropriately using any drugs and relate products in the drug therapy plan. [15],[16],[17]

The pharmacist must also assure that the patient has a thorough understanding of the disease and medications prescribed in the plan. Pharmacists can help their patient's better stick to their medication regimens by providing greater information on their prescriptions and known side effect.[15],[16]

Regarding to the responsibilities of the community pharmacists, they provide many services, like:

- Dispense prescription medicines to the public.
- Ensure that different medicines are compatible.
- Check dosage of medicines and ensure that the medicines are correctly and safely supplied and assorted (pharmacists are legally responsible for any dispensing errors).[18],[19]

- Supervise the preparation of any medicines.
- Keep a register of controlled drugs for legal and stock control purposes.
- Coordinate with doctors about prescriptions.
- Sell over-the counter medicines.
- Advise the public on the treatment of simple diseases.
- Advise patients about any adverse effects of medicines or potential interactions with other medicines or the food.[17],[18],[19]

2.2-Pharmacologic Therapy

2.2.1-Pharmacologic Therapy of Ischemic Stroke

1-Thrombolysis: All patients with an ischemic stroke within 4-5 hours of onset should receive thrombolytic therapy with IV tissue plasminogen activator (**alteplase**) because it is effective in improving stroke outcome.

2-Brain edema develops between the second and fifth day after stroke onset, with symptoms and signs of increasing intracranial pressure. Elevated ICP is managed by head elevation and osmotic agents such as **mannitol**.

3-Maintenance of an adequate cerebral perfusion pressure helps to prevent further ischemia. attempts to lower the blood pressure of hypertensive patients during the acute phase (i.e., within 2 weeks) of a stroke should generally be avoided, as lowering the blood pressure may

further compromise ischemic areas. However, the pressure should be lowered if it exceeds 220/120 mm Hg [short-acting parenteral agents (e.g., **labetalol**, **nicardipine**, and **nitroprusside**) are preferred].

4- **Aspirin** is the only antiplatelet agent that has been proven effective for the acute treatment of ischemic stroke, there are several antiplatelet agents proven for the secondary prevention of stroke.
Aspirin should be started between 24 and 48 hours after completion of **alteplase**. In patients not eligible for thrombolytic therapy, the immediate administration of aspirin 325 mg orally daily is indicated.

5-Anticoagulant drugs should be started in the case of atrial fibrillation or other source of cardioembolism. Treatment is with **warfarin** (target INR 2.0–3.0) or **dabigatran**.[21],[22]

2.2.2-Secondary Prevention of Ischemic Stroke

Those who have experienced an ischemic stroke have an increased risk of a further stroke so secondary prevention is important.

1-Antiplatelets: **aspirin**, **clopidogrel**, and the combination of **aspirin** and extended-release **dipyridamole** are the antiplatelet agents most commonly used for this purpose.[1]

2-Anticoagulant: In all patients with atrial fibrillation who have suffered a stroke, anticoagulation should aim for INR of (2.0 to 3.0).
Dabigatran, a direct thrombin inhibitor, has recently shown to be more

effective than **warfarin** at high doses (150 mg twice daily) and is associated with a lower hemorrhagic risk at low doses (110 mg twice daily) .[2],[3]

3-Statins: treatment with statins reduces the risk of recurrent stroke. Statins is used in ischemic stroke patients to achieve a LDL cholesterol concentration of less than 100 mg/dl.[15],[2]

4-Raised blood pressure is common after ischemic stroke, and its treatment is associated with a lowered risk of stroke recurrence. ACE inhibitor and a diuretic are usually considered for reduction of blood pressure in patients with stroke or TIA after the acute period (first 7 days).[11],[12]

2.2.3-Pharmacologic Therapy of Hemorrhagic Stroke

1-There is currently no proven pharmacologic strategies for treating intracerebral hemorrhage.[13],[14]

2-Subarachnoid hemorrhage is associated with a high incidence of delayed cerebral ischemia after the bleeding episode. Vasospasm of the cerebral vasculature is thought to be responsible for the delayed ischemia and occurs between 4 and 21 days after the bleeding. The calcium channel blocker **Nimodipine** (60 mg every 4 hours for 21 days) is recommended to reduce the presence and severity of neurologic deficits resulting from delayed ischemia.[16],[17]

2.3- Complications of Stroke

Complications of stroke are summarized in (Table 1)

Complication	Prevention	Treatment
Chest infections	Nurse Care	Antibiotics
Seizure	Maintain cerebral oxygenation	Anticonvulsants
DVT / PE	S.C. heparin	Anticoagulant
Hyperglycemia	Treat diabetes	Insulin if necessary
Pressure sore	Frequent turning, monitor pressure area	Nursing care, special matter
Urinary infection	Use penile sheath, avoid catheterization if possible	Antibiotics
Constipation	Appropriate laxative and diet	Appropriate laxative

Table 1: Complications of stroke and their prevention and treatment

2.4-Rehabitilation

Proper rehabilitation of the stroke patient involves early physical, occupational, and speech therapy and is effective in reducing long-term disability of stroke's patient.[14],[16]

2.5-Participants and Methods

We visited Al-Diwaniyah teaching hospital to make trials concerning the role of the pharmacist in patient treatment in general and patient of stroke particularly.[16],[17]

Eleven of the 22 review pharmacists enlisted to the parent trial expressed an interest in taking part in the study. Seven took part in the observed and taped consultations and four were excluded for reasons of distance, availability, or matters concerning their patients. Six of pharmacists were women.[18],[19]

The pharmacists didn't know the patients before visiting them as they were not necessarily from the same locality. They were all working as community pharmacists and were paid to provide the medication review service. [20]
They had a minimum of 5 years' experience (range١٠-١٥ years).
Most of them participated in a two day training course, including lectures on adverse drug interactions, prescribing in elderly people (aged 80 or more), improving concordance, and communication skills.[21]

Sample selection was essentially realistic and dependent on the availability of review pharmacists, the researcher, and the agreement of patients, during the fieldwork period (97% of those approached agreed to participate in this study). Participants were representative of the parent trial. Sample saturation was judged to have been reached when no new styles of consultation were witnessed and when each of the seven review pharmacists had each done a minimum of three consultations. Baseline characteristics of pharmacists in primary trial and qualitative study. Values are numbers (percentages) unless stated otherwise:

Characteristics	Primary trial (n=22)	Qualitative study (n=7)
Women	13 (59)	6 (86)
Mean (SD) age (years)	41.8 (7.4)	43.4 (5.2)
Mean (SD) years since first registration	17.4 (8.2)	22.5 (5.8)
Higher qualification after registration:		
Diploma, masters degree, or PhD	7 (32)	4 (57)
Postgraduate certificate only	10 (46)	2 (29)
Main employment:		
Community pharmacist	12 (32)	5 (71)
Locum community work	3 (14)	2 (29)
Hospital pharmacist	5 (23)	0
Other	2 (9)	1 (14)
Previous experience:		
Medication review	13 (77)*	4 (57)
Home visits†	5 (29)	2 (29)

*Data on 17 pharmacists.

Discourse analysis is a methodological approach that can be used in the study of communication in healthcare consultations. Activity type analysis permits the identification of characteristic forms of talk such as advice giving. Fine grained analysis of the conversational properties of the consultation enabled recognizable patterns of awkward or critical moments to be identified.[22]

We highlighted instances where the communicative competences of the participants were put under pressure. [23]

Chapter Three

Results

Since the patient of stroke is unconscious; the role of pharmacist is limited to some actions which help him in receiving the best way of care through many prospects such as giving their priority to dose adjustment, time of dosing, dose interval and interactions that occur between many drugs.[23]

The results showed a uniform shape to the consultations. A strong mode of talking or discourse of advice giving was identified. It was during many of these identified episodes of advice giving that disruptions or critical moments occurred.[21],[22]

The style of advice giving was essentially instructive. The pharmacists provided advice, information, or instruction on a constant basis throughout the consultation. [21],[22]

Advice given was often unsought and invariably in the absence of a patient initiated problem or request for advice. It was often resisted or rejected by the patients. The patients adopted a variety of conversational strategies, including direct or indirect challenges to the pharmacists' authority and knowledge boundaries. [16],[17]

Patients' knowledge and experience as a challenge to the pharmacists' advice giving role, Conversational attempts by the patients to resist advice included emphasis of knowledge and experience.[19],[20]
The sequence begins with the pharmacist asking if the patient has had any changes to his medication.[20],[21]

Pharmaceutical practice is of value at many points in this stroke care process, and this may be documented in the stroke care pathway. Examples of this input are detailed below:

Management of dysphagia

Oropharyngeal dysphagia is common in patients with stroke, with aspiration rates of 22–42%. Therefore, a patient's swallow reflex should be determined after link with the speech therapist. If the patient is on an enteral feeding regimen or a texture-modified diet, the pharmacist should ensure selection of the most appropriate medicine formulation (for example, the use of commercially available solutions or thickening agents). Advice on the correct timings of prescribed medication and on appropriate administration and flushing techniques is also important, especially if an enteral feeding tube is in place. Examples of medication where this advice is particularly important include phenytoin, due to its interaction with enteral feeds, and carbamazepine, due to its possible interaction with the feeding tube.[22],[23]

Compliance with evidence-based medicine guidelines

The pharmacist should promote adherence to local and national prescribing guidelines. In recent years, the publication of the results of several large trials (for example, Heart Outcomes Prevention Evaluation [HOPE], Heart Protection Study [HPS], Clopidogrel vs. Aspirin in Patients at Risk of Ischemic Events [CAPRIE] and European Stroke Prevention Study [ESPS-2]) have demonstrated the benefit of prescribing antihypertensive drugs, statin therapy and antiplatelet agents for the secondary prevention of further thromboembolic events.[19],[20]

Monitoring of newly prescribed and existing drug therapies

The pharmacist should monitor all prescribed medication for effectiveness and adverse effects. Examples of this monitoring include attainment of target blood pressure levels (in the rehabilitation phase), monitoring for gastric irritation with antiplatelet therapy, avoidance of aggravating therapy, such as centrally acting suppressants, and

monitoring of other parameters such as urea, electrolytes, blood glucose and temperature.[21],[22]

Advice on correct management of stroke complications

Although there should be documented treatment plans (in the stroke care pathway) for all significant complications, the pharmacist can provide more detailed advice on prescribing for these complications such as hemiplegic pain, agitation, cerebral and pulmonary edema, deep vein thrombosis and depression.[22],[23]

Counseling

Each patient should receive both verbal advice and written medication information, in the form of patient information leaflets and a medication reminder chart. The latter should include information about the reason for the medication, how and when to take it, and any possible common adverse effects. The importance of long-term prophylactic treatment, such as antiplatelet, antihypertensive and cholesterol-lowering therapy, should be stressed to the patient.[18],[19],[20]

Assessment of potential compliance and concordance problems

After a stroke, patients may experience difficulty in taking their prescribed secondary prevention medication. These compliance or concordance issues may arise from any impairment in manual dexterity or cognitive function resulting from the stroke. The use of any compliance aids should be with the consent of the patient.[20],[21]

Chapter Four

Discussion

Pharmacists found many opportunities to offer advice, information, and instruction. These advice giving modes were rarely initiated by the patients and were given despite a no problem response and deliberate displays of competence and knowledge by patients.[21],[22]

The advice giving role of pharmacists during consultations with patients of stroke has the potential to undermine and threaten the patients' assumed competence, integrity, and self-governance. Caution is needed in assuming that commonsense interventions necessarily lead to health gain.[21],[22]

Pharmacists should encourage patients to make healthy lifestyle choices such as increasing physical activity, maintaining a healthy weight, reducing stress, and quitting smoking.[18],[19]

Pharmacists are the first person patients see when they receive a prescription for a medication. They can counsel patients about dosing instructions, medication interactions, adverse effects, and the importance of medication adherence.[13],[20]
They contribute in obtaining medication and medical history and providing education.[1],[4],[5]

Patients' adherence to the secondary stroke prevention therapies is important to reduce the recurrent stroke, there are many barrier that influence of adherence, first it's about prescribe related barrier such as limited time with the patient, lack of Motivation to spend additional time counseling uncomfortable speaking to patient about adherence, second is pharmacist related barriers for example: limited time to review medication, refill patient histories, face difficulty to communicate with prescribers, and has limited approach on patient medical record .[1],[4]

The last barrier is patient-related barriers such as complexity medication regimen, high cost, concern about side effects or adverse effect of drugs receives contradictory information from health-care providers, they have little knowledge about the medications, forgetfulness, and the other unexplained factors.[3],[4],[9]

The most common reasons that given by patients not taking their medication are because they think that their condition become well, the other cause is they forget to take their medicines regularly. Patients who don't feel any differently when they start or stop their medicine.[5],[13]

Prescription of secondary stroke prevention is important, but adherent is also important as prescription, Health-care staffs not only physician but also pharmacist could take the responsibility to improve patient's adherence to achieve goal outcome of therapy by giving more attention to secondary stroke prevention, pharmacist provide stroke patient with detailed instruction of medicine use.[5],[7]

4.2-Medication for secondary stroke Prevention

Patient/caregiver should be able to understand the following including brand/generic name, dosage form, dose, route of administration, duration of effect, common adverse effects of medication of stroke.[1],[5],[8],[10]

80% of all strokes are ischemic in etiology, and thus antiplatelet are the backbone pharmacologic agent for the prevention of recurrent strokes. Antiplatelet therapy is preferred over oral anticoagulation such as **warfarin** for patients with noncardioembolic ischemic stroke.[11],[13]

all patients who have had an ischemic stroke should be taken antiplatelet therapy.[14],[16]

Recommended loading dose of **aspirin** is 160 mg to 325 mg, followed by 75 mg to 100 mg, once daily. The American Heart Association/American Stroke Association recommends an initial dose of 325 mg within 24 to 48 hours after a stroke.[17],[8]

Higher doses of aspirin have been found to increase the risk of side effects (primarily increased bleeding) and have no added benefit for risk reduction.[19],[20]

Patient education about stroke medication:

- Anti-platelet (for ischemic stroke and TIA) – GI upset, to take after meal
- Cholesterol-lowering agent, muscle pain (rhabdomyolysis)
  - o Must be taken before sleep
- ACEs inhibitor/ARB
  - o Will be started after two week of stroke (for ischemic stroke).
  - o Must go to nearest clinic for BP monitoring and drug initiation/ optimization.
  - o ACE- cough.
- DVT prophylaxis (if applicable).
- Anti coagulant (if applicable).
- Importance of drug compliance.

Chapter Five

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الخلاصة:

أن الهدف الرئيسي من أجراء هذا البحث وهذه الدراسة هو لأستكشاف دور صيدلي المجتمع في توفير التعليمات اللازمة لمريض مصاب بمرض السكتة الدماغية.
وكان المشاركون عباره عن نماذج مختارة من الصيادلة المجتمعيين في مستشفى الديوانية التعليمي وعينات من مرضى السكتة الدماغية الراقدين في المستشفى.

وكانت المقاييس الرئيسية للدراسة تعتمد على المدى الذي يلعب فيه الصيدلي المجتمعي دوراً هاماً في إعطاء المعلومات المطلوبة لمريض مصاب بسكتة دماغية.
حيث أظهرت النتائج دوراً بارزاً يلعبه صيدلي المجتمع في إعطاء معلومات هامة يحتاجها مريض السكتة الدماغية أهمها التفاصيل المتعلقة بالعلاج سواء بالكيفية السلمية لتناوله او بتنبيه المريض بكل شيء يتعلق بالعلاج والذي يصب في مصلحة المريض في النهاية.

وتم الأستنتاج من خلال مجموعة متنوعة من التدخلات والرصد، أنه يمكن للصيدلي المجتمعي تقديم مساهمة كبيرة، سواء في المراحل الحادة من المرض أو في مراحل إعادة التأهيل لرعاية مريض السكتة الدماغية بالتعاون مع فريق السكتة الدماغية متعددة التخصصات.
ومع ذلك، يعتمد نجاح هذه التدخلات على بناء قنوات اتصال فعالة مع مختلف أخصائيي الرعاية الصحية المشاركين في فريق السكتة الدماغية.

وزارة التعليم العالي والبحث العلمي
جامعة القادسية
كلية الصيدلة

دراسة حول دور الصيدلي المجتمعي في إعطاء التعليمات اللازمة لمريض السكتة الدماغية

بحث تخرج مقدم الى جامعة القادسية، كلية الصيدلة وهو جزء
من متطلبات نيل شهادة البكالوريوس في الصيدلة
تقدم به كل من

الطالبة علياء خالد جميل والطالب علي حمزة كامل

بأشراف الأستاذ الدكتور

د. صفاء كندوح

2018 م

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