



CODEN [USA]: IAJPBB

ISSN : 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<https://doi.org/10.5281/zenodo.7124160>

Available online at: <http://www.iajps.com>

Research Article

KNOWLEDGE REGARDING BENEFITS AND HAZARDS OF THE USE OF ASPIRIN IN DIABETIC PATIENTS AMONG NURSES

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Article Received: July 2022

Accepted: August 2022

Published: September 2022

Abstract:

Background: Aspirin is called a wonder drug because of its unique pharmacological properties and therapeutic potential. **Aim:** this study is conducted to gauge the knowledge of nurses in the management of in-patient and out-patient cases of metabolic syndrome and hence the long-term benefits and hazards of aspirin for the prevention in diabetes and macro-vascular disease. **Material and Methods:** This observational study was conducted using a purpose based convenient sampling in which 100 nurses working in different departments of District Headquarters Hospital Kasur were enrolled during September 2021 to December 2021. A self-structured expert reviewed hand-out was distributed containing 5 close ended questions regarding benefits and hazards of aspirin use respectively in diabetic patients. The response was recorded and analyzed through SPSS 21. **Results:** The majority of the participants were female (94%), married (78%), Muslim (80%) with a mean age of 27.22 ± 5.58 years. 46% were charge nurses, 72% had attended formal training courses and 60% had an experience of 10 years and above. (Table 1), 86% of the nurses agreed that aspirin use is associated with the reduction in the all-cause mortality and 97% believed that it helps in the primary prevention of acute myocardial infarction. 70% agreed that aspirin prevents from peripheral vascular disease/diabetic foot. 88% believed that long term aspirin use is associated with the potential risk of GI bleeding and 86% were of the opinion that concomitant use of proton pump inhibitors can help reduce the associated risk. 78% viewed aspirin to alter renal functions because of its NSAID (prostaglandin inhibition affect) thus compromising the renal blood flow and hence the glomerular filtration rate. On the contrary, 72% believed that all newly diagnosed diabetic patient should start taking aspirin on their own irrespective of the consultant opinion, 84% feared aspirin can further aggravate the retinopathy and 66% thought it safe to administer aspirin to uncontrolled hypertensive patients having blood pressure $> 200/110$ mmHg. **Conclusion:** Due to the grey zone between the benefits and hazards of aspirin use in diabetics, the clinical parameters should be reassessed and comprehensive glycemic control HbA1c < 7.0 , target blood pressure of $< 130/80$ mmHg, body mass index < 25 kg/m² and desirable lipid profile should be ensured along with low dose aspirin for the prophylaxis against CV related mortality and morbidity. Above all the nurses involved in the care of such chronic patients should be educated on the basis of latest treatment guidelines with special consideration to the adverse effects.

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Please cite this article in Asima Nazir et al, Knowledge Regarding Benefits And Hazards Of The Use Of Aspirin In Diabetic Patients Among Nurses., Indo Am. J. P. Sci, 2022; 09(9).

INTRODUCTION:

Aspirin has been a center of attention for researchers due to its longstanding history and life-saving therapeutic properties. Despite its widespread use in the prevention of coronary artery disease, its role in the management of diabetes is not fully understood^{1,2}. Since diabetes is associated with micro and macro-vascular complication leading to the hypercoagulable state and providing the nidus for the end organ damage due to the vascular compromise. It is tantamount that the benefits and hazards of aspirin should be weighed and assessed among all the healthcare workers especially nurses involved in the chronic patients of the high-risk group. Studies has shown that aspirin reduced mortality by 22% by preventing CV-related deaths including diabetes.^{1,2} According to the latest guidelines the American Diabetes Association recommends the use of low dose aspirin (81–152mg) of aspirin for primary prevention in all patient having concomitant diabetes above 40 years and any of the other risk factors such as smoking, obesity, family history, hypertension and dyslipidemias.⁴ However the unchecked long term use has not been advocated by any of the drug authorities or professionals. Similarly Scottish Intercollegiate Guidelines Network and NICE have discouraged the use of aspirin for the primary prevention of CV related deaths because of the potential for GI bleeding risk.^{5,6,7} therefore the benefits should be weighed against the hazards to avoid diversion from the management plan and compliance.⁸ Several cohorts from the UKPDS, ADA and Joint British Societies have found out that around (17–31%) of the general population was taking aspirin

without any significant comorbidities.^{9,10,11} This has led to under-dosing and in some cases over-dosing because of the confusion that exists in the mind of the healthcare providers including nurses and doctors regarding the definite protocol for the use of aspirin in the high-risk diabetic population. Therefore, this study was launched to out-reach and assess the knowledge of nurses regarding the benefits and hazards of aspirin in diabetic patients.

MATERIAL AND METHODS:

This observational study was conducted during September 2021 to December 2021. Using a purpose based convenient sampling method a total of 109 nurses were approached out of which 100 nurses working in different departments of District Headquarters Hospital Kasur were enrolled after written consent and due approval from the ethical board and competent authorities. A self-structured expert reviewed hand-out was distributed containing 5 close ended questions regarding benefits and hazards of aspirin use respectively in diabetic patients. Inclusion criteria consisted of at least 5 years of patient care experience and those who can list the therapeutic class, and mechanism of action and the generic name of aspirin. Those who didn't give the written consent were excluded from the study. The response was recorded and analyzed through SPSS 21. Confidentiality and privacy of the participants was maintained at every level during the study.

RESULTS:**Table.1. Socio demographic data of the participants**

Variables	n=100	Frequency (%)
Age (Years)		
20-24	20	20
25-29	38	38
30-34	14	14
35-39	12	12
40-44	09	09
45-49	05	05
>50	02	02
Gender		
Male	06	06
Female	94	94
Religion		
Muslim	80	80
Christian	17	17
Hindu	03	03
Marital Status		
Married	78	78
Single	16	16

Divorced	02	02
Widowed	02	02
Designation		
Staff Nurse	26	26
Charge Nurse	46	46
Head Nurse	28	28
Experience (Years)		
5-9	32	32
10-14	60	60
>15	08	08
Formal Training Courses?		
Yes	72	72
No	28	28

The majority of the participants were female (94%), married (78%), Muslim (80%) with a mean age of 27.22 ± 5.58 years. 46% were charge nurses, 72% had attended formal training courses and 60% had an experience of 10 years and above. (Table 1).

Table.2 Knowledge of nurses regarding the use of aspirin in diabetics (n=100)

Serial#	Statement	Agree (%)	Disagree (%)
1	Does aspirin has a mortality benefit?	86	14
2	Does aspirin useful in the prevention of stroke?	76	24
3	Does aspirin helps in the primary prevention of acute myocardial infarction?	97	03
4	Should a person newly diagnosed with diabetes start taking aspirin on its aspirin?	72	28
5	Does aspirin prevents from peripheral vascular disease/diabetic foot?	70	30
6	Does aspirin aggravates diabetes associated retinopathy?	84	16
7	Is long term aspirin use associated with a potential risk of GI bleeding?	88	12
8	Concomitant use of proton pump inhibitors can reduce the risk of GI bleed in patients taking aspirin?	86	14
9	Is long term aspirin use leads to impaired renal function?	78	22
10	Can patients with uncontrolled blood pressure > 200/110 mmHg can be prescribed aspirin?	66	24

86% of the nurses agreed that aspirin use is associated with the reduction in the all-cause mortality and 97% believed that it helps in the primary prevention of acute myocardial infarction. 70% agreed that aspirin prevents from peripheral vascular disease/diabetic foot. 88% believed that long term aspirin use is associated with the potential risk of GI bleeding and 86% were of the opinion that

concomitant use of proton pump inhibitors can help reduce the associated risk. 78% viewed aspirin to alter renal functions because of its NSAID (prostaglandin inhibition affect) thus compromising the renal blood flow and hence the glomerular filtration rate. On the contrary, 72% believed that all newly diagnosed diabetic patient should start taking aspirin on their own irrespective of the consultant

opinion, 84% feared aspirin can further aggravate the retinopathy and 66% thought it safe to administer aspirin to uncontrolled hypertensive patients having blood pressure > 200/110mmHg. (Table. 2)

DISCUSSION:

Although this study was based to assess the knowledge regarding the aspirin use and its associated benefits and hazards in diabetic population, previous studies have demonstrated its reluctant use even in the high risk candidates having micro vascular retinal complications where only 35.3% patients were prescribed the optimal dose of aspirin.⁹⁻¹¹ The other evidence supporting its below average usage is the fear of major and minor bleeds and 22.8 % shunted to other regimes such as clopidogrel having almost the similar risk in new and higher potential to cause GI bleeding in already diagnosed cases.¹² Another study has also demonstrated that the concomitant use of aspirin with proton pump inhibitors can lessen the chances of GI event as compared to clopidogrel alone.¹³⁻¹⁴ since the outbreak of the diabetic pandemic and its breeding complications, nurses are in a more suitable position to render medical advice, impart health education, influence patients thought process and ensure compliance toward ant diabetic medications and lifestyle modifications. This was a questionnaire based traditional paper survey although an online survey would have limited the propensity of response and verbal bias.¹⁵ Previous study conducted on the mortality reduction benefits of aspirin in CV related deaths reported an uphill trend in the adherence to the guideline directed medical therapy and prophylactic use of antiplatelet and statins. The sub-optimal compliance to the international accepted protocols of the cost effective aspirin use can be attributed to the lack of understanding of underlying pathophysiology.¹⁶ The lack of clear cut demarcation of guidelines regarding the eligible pool of diabetic patients in whom, when what doses the primary and secondary prophylaxis of aspirin should be initiated has sparked a universal debate and has led to wide array of responses among the healthcare professionals.

CONCLUSION:

Due to the grey zone between the benefits and hazards of aspirin use in diabetics, the clinical parameters should be reassessed and comprehensive glycemic control HbA1c <7.0, target blood pressure of <130/80mmHg, body mass index < 25kg/m² and desirable lipid profile should be ensured along with low dose aspirin for the prophylaxis against CV related mortality and morbidity. Above all the nurses involved in the care of such chronic patients should be

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Acknowledgement:

The authors are highly indebted to their respected mentors, teachers and hospital authorities for their valuable input and kind support during the study.

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