Heart, Lung and Circulation (2019) **28,** 1788–1794
1443-9506/04/$36.00
https://doi.org/10.1016/j.hlc.2018.10.024

ORIGINAL ARTICLE

Satisfaction With Statin Treatment Among Adult Coronary Artery Disease Patients: An Experience From a Resource-Constrained Setting

Rubina Mulchandani, MSc [a], Tanica Lyngdoh, MD, PhD [a], Praloy Chakraborty, MD, DM [b], Ashish Kumar Kakkar, MD, DM [c*]

[a]Indian Institute of Public Health-Delhi, Gurgaon, India
[b]Department of Cardiology, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India
[c]Department of Pharmacology, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India

Received 22 January 2018; received in revised form 9 October 2018; accepted 25 October 2018; online published-ahead-of-print 10 December 2018

Background Statins are the most widely prescribed hypolipidaemic drugs for coronary artery disease (CAD) patients, but have been found to cause muscle and nerve related adverse effects which can affect patient satisfaction with treatment. Literature on treatment satisfaction among statin users, especially from resource-limited settings is inadequate. The aim of this cross-sectional study was to assess the level of satisfaction with treatment among statin users and evaluate the relationship between adverse effects experienced by patients and their satisfaction with the medication.

Methods This study included 300 adult CAD patients visiting the cardiology department of a tertiary care hospital in the northern region of India, who were prescribed statins for their diagnoses. An interviewer administered, validated and standardised Treatment Satisfaction Questionnaire for Medication (version 1.4) was used for data collection.

Results Around three quarters of the population reported being overall satisfied with their medication. Mean scores were calculated for Effectiveness, Convenience, Side-Effects and Global Satisfaction. The patients reported high scores (above 60%) for all domains. Those experiencing any adverse effect were found to be more likely to report lower effectiveness. Additionally, medication effectiveness showed a positive correlation with overall treatment satisfaction.

Conclusions The study shows that treatment satisfaction is critical to gauge patient experiences with the treatment which can impact medication adherence and compliance. It's a crucial measure especially among CAD and other chronic disease patients since greater satisfaction can improve clinical outcomes. More research is warranted to better understand the relationship between medication effectiveness and treatment satisfaction.

Keywords Statins • Treatment satisfaction • TSQM • Adverse effects

*Corresponding author. Present address: Department of Pharmacology, Postgraduate Institute of Medical Education and Research, Chandigarh, India. Tel.:+ 91 9868051003. Emails: drashishkakkar@gmail.com, kakkar.ashish@pgimer.edu.in

Introduction

Coronary artery disease (CAD) has significantly contributed to the global burden of disease for the past several decades [1] and abnormally high lipid levels, particularly low density lipoprotein cholesterol (LDL), are considered to be the most significant risk factors for atherosclerosis and CAD [2]. Statins are the most widely used class of lipid lowering therapies, prescribed to CAD patients due to their potent ability to inhibit cholesterol biosynthesis [3,4]. In spite of their significant therapeutic benefits, statins are associated with several adverse effects like muscle related adverse events, hepatic and renal dysfunction and cognitive disorders [5].

The emergence of these adverse effect symptoms and the resulting discomfort can possibly have a negative impact on patient satisfaction with their therapy, which can, in turn, affect their compliance and overall health status. Satisfaction with medication can be defined as ''the health care recipient's reaction to the salient aspects of his or her treatment experience, including the process of taking the medication as well as the associated results of its use" [6,7]. It is a reflection of the expectations as well as perceptions of the patients about the treatment [8]. Satisfaction levels are low if their evaluation of the treatment received is lower compared to their expectations from the therapy [9].

Treatment satisfaction among patients is significantly influenced by a number of factors like the disease severity, complexity of the regimen, duration and effectiveness of therapy, adverse effects of the drug [10], which together influence adherence, a measure of the quality of provided care [11].

Adherence is defined as ''the extent to which a patient follows the instructions of the health care provider with regard to taking medications and adopting a healthy lifestyle" [12]. A literature review conducted to determine if an association exists between treatment satisfaction and adherence reported a positive relationship between the two measures [13]. Thus, satisfaction with medication predicts correct and consistent use of the medicine as well as continuation of the drug over time [11].

A systematic review suggested that patients suffering from a chronic disease are likely to report lower satisfaction rates as well as adherence [14]. Cardiology patients who were more than 80% adherent to their treatment had better clinical outcomes, with treatment satisfaction influencing adherence the most. Another systematic review showed that adherence was crucial to the prevention and control of coronary heart disease (CHD) as it reduced cardiac events, and improved survival and quality of life of patients [15].

It is thus an established fact that patient satisfaction is a crucial tool for making health related decisions including continuation of therapy as well as providing patients with a comfortable and acceptable treatment experience. A 2017 systematic review on determinants of patient satisfaction found that the health care service quality indicators were the most crucial determinants across the wide diversity of included studies [16]. Although there is a significant body of evidence on the therapeutic benefits derived from statin therapy, description and prevalence of a few adverse effects [17] and their management [18], literature on the level of satisfaction among patients, both with their caregivers as well as the treatment they receive especially in resource constrained settings is limited. The objective of the current study was to assess the level of treatment satisfaction among CAD patients visiting a tertiary care public hospital in New Delhi and study its relationship with the presence or absence of adverse effects as reported by the users while on statin therapy.

Methods

Study Design and Setting

The study was cross-sectional in design and was carried out at the Out-Patient clinic (OPD) of the cardiology department of Safdarjung Hospital in New Delhi, one of the largest tertiary care hospitals in north India. The hospital caters to patients from all over the country and especially the northern states. The data was collected from a total of 300 patients who visited the OPD for consultation during the period from February to April 2016.

Study Population

As per the study inclusion criteria, we enrolled CAD patients with ages 18 years and above, who were either currently taking statins for a minimum of 6 months, or were past users (within the preceding 6 months) of any of the currently marketed statins. Only those subjects who provided written informed consent, were eligible for participation. All consecutive CAD patients satisfying the eligibility criteria were enrolled into the study using convenience sampling until the required sample size was attained. Participants prescribed other drugs that could cause adverse effects similar to statins such as muscle related adverse events, were excluded. We chose a minimum statin prescription period of 6 months since statin related adverse effects usually emerge within 6 months of statin usage [19].

Study Tools

An interviewer (RM) administered pre-tested and structured questionnaire was used for collecting data from study participants. A standard validated 'Treatment Satisfaction Questionnaire for Medication' (TSQM) (Version 1.4), available in both vernacular and English languages, was used to assess patient satisfaction with their medication [11]. The patients were given the option to chose the English or vernacular version of the tool for assessment.

The TSQM is a questionnaire that helps assess patient satisfaction with therapy since the time he/she has been put on medication. A total of 14 questions provide information specific to four domains: Effectiveness, Side Effects, Convenience with the medication and Global Satisfaction. Except for one dichotomous response, all the other questions have a

five to seven point Likert type scale to measure responses [11]. All the required permissions for using the validated tool were obtained prior to initiation of the study.

Data on the prevalence of adverse effects experienced by the statin users was collected as a part of a previous study that has been reported [20], which was then used to explore the correlation between adverse effects and patient satisfaction with their medication.

Statistical Analysis

The sample size was determined based on prevalence of statin related adverse effects. The prevalence of major adverse effects was examined from literature. Based on the largest prevalence of myopathy, the principal adverse effect, the sample size required for the study with 5% absolute precision and 95% confidence interval was calculated to be 288. Thus, a total of 300 patients were recruited in the present study.

Ethical Considerations

Prior study approvals were obtained from the Institutional Ethics Boards at Safdarjung Hospital, New Delhi as well as the Indian Institute of Public Health–Delhi, Gurugram. The study was conducted in accordance with principles of International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) Good Clinical Practice, Indian Council of Medical Research – Ethical Guidelines for Biomedical Research and Declaration of Helsinki. The participants were provided with the details of the study via a patient information sheet and were given the opportunity to clarify their queries. Those willing to voluntarily participate and complete the questionnaires were then asked to sign the informed consent document prior to enrolment. In case the participant was illiterate, study objectives and procedures were explained to the participants in the presence of a witness. TSQM and study questionnaires were administered by the investigator in English or vernacular language (Hindi). Both the versions have been validated in previous studies. Confidentiality of the study participants was ensured by allotting a unique study identification number. Any relevant heath information obtained from the participant was referred to the treating physician for further follow-up and intervention if necessary.

Results

A total of 300 subjects were enrolled in the study, of which 298 were current statin users and 2 were past users. About 68% of the patients were receiving atorvastatin and rest were in the rosuvastatin group which also included one patient on simvastatin. The mean age of the patient group that experienced adverse events was about 58 years while that in non-adverse effect group was 56 years. Seventy-nine per cent (79%) of the total study participants were males. Almost 3/5 of the total study population resided in the urban areas. The majority (59%) of the participants had studied up to primary or secondary levels.

Among the study population, 71.3% (n = 214) participants experienced treatment emergent adverse effects. The number of males and females experiencing statin related adverse effects was 68% and 84% respectively. The proportion of males without side effects was nearly double that of females. Those who experienced side effects were on statins for a longer duration compared to those who did not. The type of statin used and the prescribed dosage was not significantly different between the two groups (Table 1).

Baseline history of illness and prevalence of adverse effects among statin users have been published previously and are briefly described here [20]. Among the 300 study participants, 63%, 35% and 55% had a prior history of a heart attack, were diabetic or hypertensive themselves respectively while one-fifth of the statin users had a family history of these conditions. Fasting blood glucose exceeded 150 mg/dl in nearly 20% of survey respondents. Nearly 6% and 24% of the participants had undergone either a previous bypass surgery or an angioplasty respectively.

The prevalence of muscle related adverse effects was highest in the study population. Nearly 32% of the patients complained of muscle pain. More than one third reported leg cramps and nearly half complained of muscle weakness and fatigue after they received a prescription of statins. Joint pain and memory problems each were reported by more than 20% of the statin users. Symptoms resembling or suggestive of peripheral neuropathy that included numbness, tingling and burning sensations in the limbs were recorded in more than 30% of participants.

Almost 83% of all the statin users were reportedly satisfied with the ability of the medication to prevent, treat and relieve their symptoms, as well as the time it took for the medication to start working. Around 71% of the study population reported having experienced some adverse-effect while they were on statins. More than 96% of participants said that it was easy to both plan and consume the medication as instructed by their clinician. More than 65% of the participants were very confident about the medication they were on and were very certain that the benefits of their therapy outweighed the risks. Overall, three-quarters of the CAD patients (75%) on statins reported that they were satisfied with the medication (Table 2).

Out of the 214 patients experiencing adverse effects, 96 (45%) rated them as somewhat bothersome and almost 43% of them said they were a little bothersome. The side effects affected the physical health somewhat for 55% statin users and minimally for 33%. For more than three-quarters of them, the side effects reportedly did not affect their mental health in any way. Overall, the side effects only somewhat affected the treatment satisfaction for 52% and minimally for 45% of the 214 users (Table 3).

Apart from describing each of the 14 items in the questionnaire, a cumulative score was calculated for the 300 participants. The mean scores for the study population were 63.7%, 75.9%, 66.09% and 64.57% for Effectiveness, Side

Table 1 Description of the study population, categorised by those having and not having adverse effects.

Characteristic	Patients with side-effects (n = 214)	Patients without side-effects (n = 86)	P-value
Age in years (SD)	57.6 (11.2)	55.9 (11.9)	0.250
Sex: (%)	160 (67.8)	76 (32.2)	0.009
Males	54 (84.38)	10 (15.63)	
Females			
Area of residence: (%)	90 (72.58)	34 (27.42)	0.680
Rural	124 (70.45)	52 (29.55)	
Urban			
Duration of statin use (%)	104 (63.41)	60 (36.59)	0.004
6 months-2 yrs	64 (80.00)	16 (20.00)	
2 yrs-5 yrs	46 (82.14)	10 (17.86)	
5 yrs-25 yrs			
Type of statin used (%)	148 (72.55)	56 (27.45)	0.490
Atorvastatin	66 (68.75)	30 (31.25)	
Rosuvastatin*			
Statin dosage	Patients with side-effects	Patients without side- effects	
Atorvastatin: (%)			
Less than 40 mg	62 (79.49)	16 (20.51)	0.080
40 mg or more	86 (68.25)	40 (31.75)	
Rosuvastatin: (%)	Patients with side-effects	Patients without side- effects	
Less than 20 mg	18 (72.0)	7 (28.0)	0.680
20 mg or more	48 (67.61)	23 (32.39)	

*Rosuvastatin group also included one patient on simvastatin.

Effects, Convenience and Global Satisfaction respectively. The participants reported high treatment satisfaction rates in excess of 60% for all the domains (Table 4).

The correlation coefficient of the relationship between the Effectiveness and Global Satisfaction scores was found to be 0.6961 (~0.70) which suggests a strong positive correlation and a linear relationship between the two variables.

We performed additional logistic regression analysis to study if Effectiveness and Global Satisfaction had an association with the presence/absence of side effects among participants. The two domains were categorised into two groups: Scores ≤50% and scores >50%.

The crude estimates (OR = 0.37) showed that participants who did not report any side-effects were 63% less likely to have an Effectiveness score of less than 50% compared to those who experienced at least one side-effect. The association remained significant even after adjusting for possible confounders ($p < 0.05$).

The Global Satisfaction domain did not show any significant association with side-effects prevalence in the study population ($p > 0.05$) (Table 5).

Discussion

Ours is one of the few studies to have looked at treatment satisfaction among CAD patients on statins. A similar cross-sectional study from Spain, assessed treatment satisfaction among pitavastatin users but they used the abbreviated version of the TSQM, i.e. TSQM-9 which does not include questions on side-effects of the medication [21]. Haddad et al. evaluated treatment adherence to statins, quality of life and treatment satisfaction among Lebanese patients with dyslipidaemia. The study found a significant positive association between treatment adherence and treatment satisfaction scores including global satisfaction, convenience and effectiveness. However, the authors did not assess specific adverse effects experienced by statin users that could have a significant bearing on nonadherence and low illness perception [22].

The results from our survey shed light on how the patients felt about the therapy they were put on, taking into account their adverse effect experiences. There was an association between side-effects and medication effectiveness as reported by them. Effectiveness was also found to show a strong positive correlation with Global Satisfaction. Although more than two-thirds of the study population reportedly experienced one or more adverse effects after they were prescribed statins, it was only somewhat or a little bothersome for a vast majority of them. The side effects did not greatly affect the physical and mental health of the participants and their overall satisfaction with their treatment also remained unaffected. In spite of the fact that only a handful of them had some idea about the side effects, more

Table 2 **Participant responses to the Treatment Satisfaction Questionnaire for Medication (TSQM).**

Characteristics	Categories	Statin users (n = 300)
Satisfied with the ability of the medication to prevent or treat symptoms:	Dissatisfied (%)	6 (2.00)
	Somewhat satisfied (%)	43 (14.33)
	Satisfied (%)	250 (83.33)
	Very satisfied (%)	1 (0.33)
Satisfied with the ability of the medication to relieve symptoms:	Dissatisfied (%)	6 (2.00)
	Somewhat satisfied (%)	44 (14.67)
	Satisfied (%)	248 (82.67)
	Very satisfied (%)	2 (0.67)
Satisfied with the time it takes for the medication to start working:	Dissatisfied (%)	6 (2.00)
	Somewhat satisfied (%)	42 (14.00)
	Satisfied (%)	250 (83.33)
	Very satisfied (%)	2 (0.67)
Do you experience any side effects due to the medication:	Yes (%)	214 (71.33)
	No (%)	86 (28.67)
How easy it is to use the medication:	Extremely difficult (%)	1 (0.33)
	Difficult (%)	2 (0.67)
	Somewhat easy (%)	7 (2.33)
	Easy (%)	290 (96.67)
How easy it is to plan your medication:	Difficult (%)	2 (0.67)
	Somewhat easy (%)	7 (2.33)
	Easy (%)	291 (97.00)
How convenient is it to take the medication as instructed:	Somewhat convenient (%)	6 (2)
	Convenient (%)	293 (97.67)
	Very convenient (%)	1 (0.33)
Overall confidence about the medication:	Not at All Confident (%)	2 (0.67)
	A Little Confident (%)	5 (1.67)
	Somewhat Confident (%)	94 (31.33)
	Very Confident (%)	197 (65.67)
	Extremely Confident (%)	2 (0.67)
Certainty about good things outweighing bad things:	A Little Certain (%)	7 (2.33)
	Somewhat Certain (%)	90 (30)
	Very Certain (%)	203 (67.67)
Overall satisfaction with the medication:	Dissatisfied (%)	10 (3.33)
	Somewhat satisfied (%)	60 (20)
	Satisfied (%)	226 (75.33)
	Very Satisfied (%)	4 (1.33)

than 60% of them were confident about their medication and believed the medication benefits outweighed its risks. Almost three-quarters of the participants were reportedly satisfied with their treatment.

Unlike our study, some studies done on treatment satisfaction amongst chronic disease patients have reported low satisfaction as well as low adherence to the prescribed therapy [23,24]. The difference in results could be attributed to the fact that the highest educational qualification of almost half of our study population was primary school, due to which their knowledge and understanding of their disease, statin therapy and its risks and benefits was possibly inadequate. Literature shows that treatment satisfaction is higher amongst participants with lower educational status [25,26]. Better communication and higher levels of trust in their physician, as well as more confidence in their treatment might have led to greater satisfaction and adherence.

Studying the relationship between overall effectiveness and adverse-effect prevalence has shown some interesting findings. Participants experiencing greater discomfort are less likely to show a higher treatment satisfaction rate and vice-versa. Such an association has not been explored earlier and even though these results, being exploratory, need to be interpreted with caution, they can pave the way for new hypotheses for future studies to establish causal relationships

Table 3 Participant responses to TSQM questions on side-effects experienced by them.

Characteristics	Categories	Users having side-effects (n = 214)
How bothersome are the side effects:	Extremely bothersome (%)	2 (0.93)
	Very bothersome (%)	23 (10.75)
	Somewhat bothersome (%)	96 (44.86)
	Little bothersome (%)	91 (42.52)
	Not at all bothersome (%)	2 (0.93)
Do side effects affect your physical health:	A great deal (%)	2 (0.93)
	Quite a bit (%)	24 (11.21)
	Somewhat (%)	118 (55.14)
	Minimally (%)	70 (32.71)
Do side effects affect your mental health:	Somewhat (%)	5 (2.34)
	Minimally (%)	45 (21.03)
	Not at all (%)	164 (76.64)
Do side effects affect your overall satisfaction:	Quite a bit (%)	6 (2.80)
	Somewhat (%)	112 (52.34)
	Minimally (%)	96 (44.86)

Table 4 Treatment satisfaction scores of the study participants.

TSQM Component/Domain	Mean (SD)
Effectiveness	63.70 (7.20)
Side effects	75.93 (18.76)
Convenience	66.09 (2.64)
Global satisfaction	64.57 (10.70)

between treatment satisfaction and adverse effects associated with a treatment regimen.

The findings reiterate the fact that patient satisfaction with medication influences their behaviour and attitude towards therapy and is a crucial measure in the treatment assessment, especially in CAD patients, since increased satisfaction leads to better adherence which can greatly reduce ischaemic events and improve their quality of life [27]. While clinical assessment of patients helps in a better diagnosis, patient reported outcomes like satisfaction with prescribed medication provide valuable inputs for understanding the impact of the treatment on the daily life and well-being of the patient [28].

A validated and reliable tool like TSQM can help us understand the overall treatment experiences of patients in diverse disease states. Treatment satisfaction has also been found to give us an idea about patient beliefs, knowledge and attitudes towards their treatment, as well as their faith in their caregivers, as seen in our study [12]. Determining adherence and satisfaction levels can contribute to our knowledge of possible barriers to treatment. It is necessary for health care providers to use this information and try and engage patients in applying strategies that could improve satisfaction and increase adherence to therapy. Educating patients and making them better aware can make the entire treatment experience more comfortable and acceptable for them [24]. Our study has a few limitations including it being a cross sectional analysis. This precluded establishment of a causal relationship between reported adverse events and statin use.

Table 5 Association of treatment effectiveness with presence/absence of side-effects.

TSQM Domains	Presence/Absence of Side-Effects	
	Crude Odds Ratio	Adjusted Odds Ratio*
Effectiveness	0.37 (0.15–0.92), p = 0.031	0.37 (0.14–0.94), p = 0.036
Global satisfaction	0.67 (0.35–1.28), p = 0.23	0.59 (0.30–1.16), p = 0.13

*adjusted for age, sex, duration of statin use, type of statin used and statin dosage.

Response bias is an inherent limitation of survey-based study designs and cannot be eliminated altogether. We tried to minimise this bias by carefully wording our questions, pretesting the questionnaire, using precise simple language and meaningful sequencing of questions. We did not have data on creatine kinase levels in most of our patients that precluded assessment of their relation with muscle related adverse effects. In addition, since a significant proportion of the participants were not well educated, inadequate knowledge could have influenced their assessment of the adverse effects and satisfaction with their medication. However, these issues are inherent to and representative of any resource limited health care setting.

Conclusions

Measurement of treatment satisfaction is a crucial step that can assist decision makers plan the treatment strategies more effectively, to have better quality of life outcomes, along with desirable clinical outcomes [28]. Routinely assessing the levels of satisfaction with treatment needs to be encouraged to screen those patients whose experiences with their therapy may increase the possibility of poor adherence. Acquiring such data on a regular basis can possibly promote a deeper understanding of patients' perspectives along with those of the caregivers, and can lead to a better evaluation of the pros and cons of employed treatment strategies. There is a pressing need for further research in this area to better utilise the information from studies done on treatment satisfaction and adherence. This will help strengthen the communication between the patients and their care givers and help plan interventions that can make the treatment experience more pleasant for the patients.

Conflicts of Interest

None.

Source of Funding

None.

References

[1] Yusuf S, Rangarajan S, Teo K, Islam S, Li W, Liu L, et al. Cardiovascular risk and events in 17 low-, middle-, and high-income countries. N Engl J Med 2014;371(August (9)):818–27.
[2] Yusuf S, Hawken S, Ôunpuu S, Dans T, Avezum A, Lanas F, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. Lancet 2004;364(September (9438)):937–52.
[3] Maritz FJ. Efficacy and dangers of statin therapy. Cardiovasc J S Afr 2002;13(August (4)):200–3.
[4] Evans M, Roberts A, Davies S, Rees A. Medical lipid-regulating therapy: current evidence, ongoing trials and future developments. Drugs 2004;64 (11):1181–96.
[5] Feng Q, Wilke RA, Baye TM. Individualized risk for statin-induced myopathy. Pharmacogenomics 2012;13(April (5)):579–94.
[6] Shikiar R, Rentz AM. Satisfaction with medication: an overview of conceptual, methodologic, and regulatory issues. Value Health 2004;7 (April (2)):204–15.
[7] Ikegami N, Kawakita H. Patient satisfaction and hospital management policy. Jpn Hosp 1987;6(July):11–5.
[8] JE, Wright WR, Davies AR. Defining and measuring patient satisfaction with medical care. Eval Program Plann 1983;6(3-4):247–63.
[9] Cleary PD, McNeil BJ. Patient satisfaction as an indicator of quality care. Inquiry 1988;25(1):25–36.
[10] Revicki D. Patient assessment of treatment satisfaction: methods and practical issues. Gut 2004;53(May (Suppl 4)):iv40–4.
[11] Atkinson MJ, Sinha A, Hass SL, Colman SS, Kumar RN, Brod M, et al. Validation of a general measure of treatment satisfaction, the Treatment Satisfaction Questionnaire for Medication (TSQM), using a national panel study of chronic disease. Health Qual Life Outcomes 2004;26(February (2)):12.
[12] Albekairy AM, Alkatheri AM, Jarab A, Khalidi N, Althiab K, Alshaya A, et al. Adherence and treatment satisfaction in liver transplant recipients. Saudi J Gastroenterol 2016;22(2):127–32.
[13] Barbosa CD, Balp M-M, Kulich K, Germain N, Rofail D. A literature review to explore the link between treatment satisfaction and adherence, compliance, and persistence. Patient Prefer Adherence 2012;13(January (6)):39–48.
[14] Bitton A, Choudhry NK, Matlin OS, Swanton K, Shrank WH. The impact of medication adherence on coronary artery disease costs and outcomes: a systematic review. Am J Med 2013;126(April (4)):357.e7–357.e27.
[15] Naderi SH, Bestwick JP, Wald DS. Adherence to drugs that prevent cardiovascular disease: meta-analysis on 376,162 patients. Am J Med 2012;125(September (9)). pp. 882.e1–887.e1.
[16] Batbaatar E, Dorjdagva J, Luvsannyam A, Savino MM, Amenta P. Determinants of patient satisfaction: a systematic review. Perspect Public Health 2017;137(March (2)):89–101.
[17] Enas EA, Kuruvila A, Khanna P, Pitchumoni CS, Mohan V. Benefits & risks of statin therapy for primary prevention of cardiovascular disease in Asian Indians—a population with the highest risk of premature coronary artery disease & diabetes. Indian J Med Res 2013;138(October (4)):461–91.
[18] Raju SB, Varghese K, Madhu K. Management of statin intolerance. Indian J Endocrinol Metab 2013;17(6):977–82.
[19] Statin Therapy: Risks vs Benefit: An Expert Interview With Eliot A. Brinton, MD [Internet]. [cited 2016 Jun 22]. [Available from]: http://www.medscape.org/viewarticle/481357.
[20] Mulchandani R, Lyngdoh T, Chakraborty P, Kakkar AK. Statin related adverse effects and patient education: a study from resource limited settings. Acta Cardiol 2018;73(August (4)):393–401.
[21] Rodríguez Arroyo LA, Díaz Rodríguez A, Pintó Sala X, Coca Payeras A, Rius Tarruella J. Effectivity and satisfaction with the treatment for dyslipidemia with pitavastatin. Multicentric, descriptive, post authorised and observational study (REINA study). Clin Investig Arterioscler 2014;26(October (5)):205–17.
[22] Haddad C, Hallit S, Salhab M, Hajj A, Sarkis A, Ayoub EN, et al. Association between adherence to statins, illness perception, treatment satisfaction, and quality of life among Lebanese patients. J Cardiovasc Pharmacol Ther 2018;23(September (5)):414–22.
[23] Biderman A, Noff E, Harris SB, Friedman N, Levy A. Treatment satisfaction of diabetic patients: what are the contributing factors? Fam Pract 2009;26(April (2)):102–8.
[24] Zyoud SH, Al-Jabi SW, Sweileh WM, Morisky DE. Relationship of treatment satisfaction to medication adherence: findings from a cross-sectional survey among hypertensive patients in Palestine. Health Qual Life Outcomes 2013;6(November (11)):191.
[25] Kaldenberg DO. Patient satisfaction and health status. Health Mark Q 2001;18(March (3–4)):81–101.
[26] Aljumah K, Ahmad Hassali A, AlQhatani S. Examining the relationship between adherence and satisfaction with antidepressant treatment. Neuropsychiatr Dis Treat 2014;10:1433–8.
[27] Liberato ACS, Rodrigues RCM, São-João TM, Alexandre NMC, Gallani MCBJ. Satisfaction with medication in coronary disease treatment: psychometrics of the Treatment Satisfaction Questionnaire for Medication. Rev Lat Am Enfermagem 2016;7:24. Available from:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4915802/.
[28] Khanna PP, Shiozawa A, Walker V, Bancroft T, Essoi B, Akhras KS, et al. Health- related quality of life and treatment satisfaction in patients with gout: results from a cross-sectional study in a managed care setting. Patient Prefer Adherence 2015;9(July (9)):971–81.