

Diabetes

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### ***Introduction***

The examination profile of Mr Ward is not satisfactory and predicts he is confronted with several risk factors. Triglyceride level of Mr. Ward is 1.8mmol/l which is considered to be borderline high. Likewise, the cholesterol is 5.2mmol/l which again is very high. He also has a blood pressure higher than a safe range and a BMI below satisfactory level. This paper aims to highlight the facts and interventions which can be used for disease management for Mr Ward.

### ***Discussion***

The major challenge for maintaining a suitable glycemic control for diabetic patients is to restrict the progression of disease or development of the risk factors which turn pertinent over the course of time. The progression of disease can be restricted through considering the factors leading to weight gain, the pharmaceutical considerations, incurrence of glycemic conditions, and by taking into account the inherent restraints for administering exogenous insulin (Nichols et al, 2000). According to Davies (2004), there are number of factors which influences the consultation for diabetes patients amongst which the prominent ones include age, span of diabetes, the BMI, and measure of physical exercise. The glycaemic control remains the first and foremost target for every healthcare provider to enable insulin uptake in patients suffering from type 2 diabetes. Janes et al (2013) have highlighted the significance of daily routine and activities in management of type 2 diabetes. In view of the author, a person's way of managing the disease is influenced by his own perspectives aside from the medications and medical consultation he is relying on. The personal beliefs, ideas, culture, and family factors play a role in shaping patient's behaviour towards disease management.

The HBA1C level for Mr Ward is 86mmol/L which is much higher than the normal range. The normal HBA1C level for non-diabetic patients is <36mmol/ whereas for diabetes

patients it is 48mmol/l. Keeping in view the normal ranges, the level for Mr Ward is dangerously exceeding which makes him vulnerable to develop vascular complications. Since, it's been a while he has been suffering from diabetes, the exaggerated results for blood pressure, cholesterol, and HBA1C reveals his is not efficient in self-regulation.

The major aim for providing treatment and consultation is to alleviate the pain as to minimize the risk factors and symptoms to safe the patient from suffering through long-term complications. According to Lorber et al (2014), diabetes remains the major risk factor for CVD disorders which identified to be the most common reason of death among diabetic patients. Diabetes is vulnerable to increase the chances for a person to develop cardiovascular diseases. The risks for cardiovascular morbidity are considerably higher among patients with type 2 diabetes. The risk for CVD related morbidity is disproportionately affected by cardiovascular diseases. The risk factor which exaggerates the risks of cardiovascular morbidity includes obesity, dyslipidaemia, and hypertension (Martín-Timón et al, 2014; Meme et al, 2015). Since, Mr Ward has developed hypertension; this may promote the development of other micro and macrovascular complications. According to Long et al (2011), the risk for stroke of cardiovascular diseases in two to four folds increased in patients suffering through type 2 diabetes. The risks remain pertinent even if the risk factors in accordance with his age such as smoking, hypertension, and hypercholesterolemia. Development of the cardiovascular disorders can be prevented through regulation of glucose which relies upon the interventions related to lifestyle. For instance, the person must avoid sedentary lifestyle, smoking, obesity, hypertension, and dyslipidaemia. The condition of hypertension is prevalent for Mr. Ward since his blood pressure is 146/80mm/HgMark. It is required that the consultation provided for diabetes patients must be focused upon retaining an accurate glucose control and prevention of complications

(Cardiovascular Risk in Diabetes Study Group, 2008; Gerstein et al, 2008; ADVANCE Collaborative Group, 2008).

Metformin is usually offered as the starting insulin therapy for individuals when diagnosed with type 2 diabetes. However, most of the time, it is offered without any contra-indications or intolerance. However, in case the metformin is being used as the initial for a type 2 diabetic patients and it is apparent the person may not tolerate it or it is contra-indicated then the considerations for drug treatment with dipeptidyl peptidase-4 (DPP-4) inhibitor or sulfonylurea or pioglitazone is made. In case the initial drug treatment based on metformin has failed to efficiently control the levels of HbA1c as apparent in the case of Mr. Ward, then a dual therapy is considered where metformin is combined with a DPP-4 inhibitor or sulfonylurea or pioglitazone. The dual therapy considerations which can be made for Mr. Ward include pioglitazone and DPP-4 inhibitor, sulfonylurea and Pioglitazone, and sulfonylurea and DPP-4 inhibitor.

The fact that blood pressure of Mr. Ward is higher and indicates for the development of hypertension indicates for the need of intervention to keep his blood pressure under safe ranges. For diabetes patients, having a high blood pressure or signs of hypertension increases the chances of developing a heart disease. It is apparent that Mr Ward has developed a strong risk factor and he might at any time suffer through a stroke, a heart disease or any other related complication. He must be treated and guided to maintain lifestyle changes because the risk factors can usually be improved through maintain a healthy lifestyle. Besides, a blood pressure lowering medication is also recommended. The blood higher than 140/80 mm Hg is considered to be out of safe ranges. Referring to the fact that Mr Ward's blood pressure is found to be 146/80mm/HgMark indicates for increased chances of complications such as the kidney disease.

As part of the disease management plan, Mr. Ward is required to maintain his lifestyle. He must also be examined for development of any microvascular complication including neuropathy, nephropathy or retinopathy. One particular factor which indicates for the development of microvascular complications is that if the blood pressure cannot be controlled to safe range even if a healthy lifestyle is maintained. Mr. Ward must leave smoking if he is used to of it and must switch to a diet and exercise plan to reduce weight to control his BMI. He must be treated for hyperlipidaemia and glycaemic control (Colosia et al, 2013).

If the reading for blood pressure is found to be high, a timely observation becomes necessary. This means that Mr Ward would be required to check his blood pressured over defined intervals of time. Furthermore, the length and frequency of the blood pressure observation varies in accordance with the initial reading or if there is a development of any complication or diabetes related health risk factor. In case, the readings for blood pressure remains higher even after periodic observations, then treatment based on medication is usually recommended.

BMI forms one significant factor which causes a lifetime risk for diabetic patients. It requires deliberate attention if the patient's BMI is  $\geq 30$  kg/m<sup>2</sup> which is prevalent in case of Mr Ward. However, the BMI related risk for diabetes also increases with age. The fact that Mr Ward is standing at the borderline measure for BMI, he is capable of developing obesity which has a strong impact on diabetes related mortality and morbidity. Contrarily, the impact of BMI on life expectancy for diabetic patients decreases with age. Besides the fact that life-time risk of diabetes is directly related with the BMI, a condition similar for male and female, there is an increased likelihood of developing obesity in men. These findings have been put forward by Gu et al (2006) and Flegal et al (2005). It is clear from the findings that individual with BMI  $\geq 30$

kg/m<sup>2</sup> exhibits higher risks of death. Moreover, a number of analyses conducted at national level for diabetes management have revealed that substantial majority found to suffer through a secular increase in diabetes took place among the patients with BMI  $\geq 30$  kg/m<sup>2</sup> (Gregg et al, 2007).

### *Considerations for Physical, Psychological, and Social Factors*

Psychological support for patients with diabetes forms a crucial component of their healthcare which they require throughout the span of the disease ever since they are diagnosed with the disease. Self-management behaviours can only be provoked and facilitated through adopting psychological interventions. Patient's adherence is crucially important to determine the efficacy of therapies provided or there prevails a sub-optimal management of disease which in turn increases the chances of developing diabetes related complications. This results in deterioration patient's health yet quality of life. Hu et al (2014) has highlighted motivation as one particular factor which is always required to deal with the patients suffering through diabetes mellitus. Motivation is required to enable individual to function in a socially normal way. Besides, the author has also supported emotional regulation for such patients through cognition. This particularly includes implication of cognitive appraisals and suppression of expressions which might have adverse effects on health. The major motive behind is facilitate social adjustment for the patient, regulation of his mental health, and overall well-being.

Hermanns et al (2013) has underlined the significance of self-regulation for diabetic patients. The author has referred it as the key to retain optimal psychological functioning. The major components highlighted for self-regulation includes self-gratification, self-reactive influences, and self-discipline. Presumably, the common motives or values which have positive effects upon individuals are the development of self-respect, pro-social, and self-constructive

behaviours. Psychosocial support plays an instrumental role in inducing self-adapted care.

Diabetes usually indulges a patient in depression and pharmacological interventions, most of the time, are not really successful in preventing the psychological morbidities. Chan et al (2009) has highlighted the significance of psychosocial support for the diabetic patients. According to the author, the care and compassion extended by friends, family, and the healthcare providers as well as the other patients create positive impact upon patient's well-being and sense of resilience. This, therefore, can be used as a feasible way for facilitating self-management behaviours for diabetes control among patients.

According to the American Diabetes Association (2005), patients with diabetes must be provided counselling to make them understand the significance of lifestyle modification and alleviation of the disease and risk factors. It is important to elevate a sense of responsibility so that the patient is able to assess the effectiveness of lifestyle interventions. Prescribing the patient with metformin it require him to understand how to maintain the efficacy of the medication and keep tabs upon everyday symptoms to investigate for any alarming sign. American Diabetes Association (2005) has favoured a DPP intensive lifestyle intervention which reinforces the patients to stick with a plan to reduce weight at least 7% of their whole body weight. The intervention includes guidelines for consumption of low-fat and calorie food, increase in physical exercise for at least 150 minutes a week. The implications for the intensive lifestyle intervention are directed to allay the blood pressure and improve dyslipidaemia as both of these forms the major risk factor for cardiovascular disease as compared to Metformin. Consultation for Mr Ward must therefore concentrate upon the benefits of lifestyle intervention including cessation of smoking, dietary modifications, and physical activity.

Katzmarzyk et al (2004) has narrated the dietary modifications, weight reduction, and physical activity as the effective adjuncts which have a clear role in reducing cardio-metabolic risks. Furthermore, regular exercise improves blood pressure, insulin action, obesity, and dyslipidaemia. Additionally, the conditioning effects of physical exercise includes improvement in the cardiorespiratory fitness as well as attainment of overall longevity (Estruch et al, 2006). The target recommended for exercise includes a 30-60 minutes of moderate to intense aerobic exercise performed three or more times in a week.

Dietary recommendations for Mr Ward must include caloric restriction, reduction in intake of sodium and saturated fats, increase in carbohydrate intake, and dietary fibre. Aoi et al (2014) has recommended Mediterranean diet which comprises of nuts, fruits, and vegetables. This diet plays a role in improving mortality and morbidity and helps mitigate the risks for CVD. It may also help to regulate body metabolism and relieve patients from a number of health burdens caused due to diabetes.

### ***Conclusion***

It is apparent from the examination results of Mr Ward that he is not fervent at self-regulation. He has increased BMI, cholesterol, HBA1C, and blood pressure which pose him the risk of developing a number of macro and microvascular complications amongst which the pertinent one is the cardiovascular disorder. The current study has put forward the idea how the consultation for Mr Ward must be proceeded to improve his overall health and well-being.

### References

- ADVANCE Collaborative Group. (2008). Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes. *N engl j med*, 2008(358), 2560-2572.
- American Diabetes Association. (2005). Impact of intensive lifestyle and metformin therapy on cardiovascular disease risk factors in the diabetes prevention program. *Diabetes care*, 28(4), 888-894.
- Aoi, N., Soma, M., Nakayama, T., Rahmutula, D., Kosuge, K., Izumi, Y., & Matsumoto, K. (2004). Variable number of tandem repeat of the 5'-flanking region of type-C human natriuretic peptide receptor gene influences blood pressure levels in obesity-associated hypertension. *Hypertension research*, 27(10), 711-716.
- Chan, R., Brooks, R., Erlich, J., Chow, J., & Suranyi, M. (2009). The effects of kidney-disease-related loss on long-term dialysis patients' depression and quality of life: positive affect as a mediator. *Clinical Journal of the American Society of Nephrology*, 4(1), 160-167.
- Colosia, A. D., Palencia, R., & Khan, S. (2013). Prevalence of hypertension and obesity in patients with type 2 diabetes mellitus in observational studies: a systematic literature review. *Diabetes Metab Syndr Obes*, 6(1), 327-38.
- Davies, M. (2004). The reality of glycaemic control in insulin treated diabetes: defining the clinical challenges. *International journal of obesity*, 28, S14-S22.

- Estruch, R., Martínez-González, M. A., Corella, D., Salas-Salvadó, J., Ruiz-Gutiérrez, V., Covas, M. I., ... & Arós, F. (2006). Effects of a Mediterranean-style diet on cardiovascular risk factors: a randomized trial. *Annals of internal medicine*, *145*(1), 1-11.
- Flegal, K. M., Graubard, B. I., Williamson, D. F., & Gail, M. H. (2005). Excess deaths associated with underweight, overweight, and obesity. *Jama*, *293*(15), 1861-1867.
- Gerstein HC, Miller ME, Byington RP, et al (2008). Effects of intensive glucose lowering in type 2 diabetes. *N Engl J Med*. 2008 Jun 12;358(24):2545-59. Epub Jun 6.
- Gregg, E. W., Cheng, Y. J., Narayan, K. V., Thompson, T. J., & Williamson, D. F. (2007). The relative contributions of different levels of overweight and obesity to the increased prevalence of diabetes in the United States: 1976–2004. *Preventive medicine*, *45*(5), 348-352.
- Gu, D., He, J., Duan, X., Reynolds, K., Wu, X., Chen, J., ... & Whelton, P. K. (2006). Body weight and mortality among men and women in China. *Jama*, *295*(7), 776-783.
- Hermanns, N., Caputo, S., Dzida, G., Khunti, K., Meneghini, L. F., & Snoek, F. (2013). Screening, evaluation and management of depression in people with diabetes in primary care. *Primary care diabetes*, *7*(1), 1-10.
- Hu, T., Zhang, D., Wang, J., Mistry, R., Ran, G., & Wang, X. (2014). Relation between emotion regulation and mental health: a meta-analysis review. *Psychological reports*, *114*(2), 341-362.

- Janes, R., Titchener, J., Pere, J., Pere, R., & Senior, J. (2013). Understanding barriers to glycaemic control from the patient's perspective. *Journal of primary health care*, 5(2), 114-122.
- Katzmarzyk, P. T., Church, T. S., & Blair, S. N. (2004). Cardiorespiratory fitness attenuates the effects of the metabolic syndrome on all-cause and cardiovascular disease mortality in men. *Archives of Internal Medicine*, 164(10), 1092-1097.
- Long, A. N., & Dagogo-Jack, S. (2011). Comorbidities of diabetes and hypertension: mechanisms and approach to target organ protection. *The Journal of Clinical Hypertension*, 13(4), 244-251.
- Lorber, D. (2014). Importance of cardiovascular disease risk management in patients with type 2 diabetes mellitus. *Diabetes, metabolic syndrome and obesity: targets and therapy*, 7, 169.
- Martín-Timón, I., Sevillano-Collantes, C., Segura-Galindo, A., & del Cañizo-Gómez, F. J. (2014). Type 2 diabetes and cardiovascular disease: Have all risk factors the same strength. *World J Diabetes*, 5(4), 444-470.
- Meme, N., Amwayi, S., Nganga, Z., & Buregyeya, E. (2015). Prevalence of undiagnosed diabetes and pre-diabetes among hypertensive patients attending Kiambu district Hospital, Kenya: a cross-sectional study. *The Pan African medical journal*, 22.
- Nichols, G. A., Hillier, T. A., Javor, K., & Brown, J. B. (2000). Predictors of glycemic control in insulin-using adults with type 2 diabetes. *Diabetes care*, 23(3), 273-277.