

Clinical decision making skills nursing essay



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Mdm Chan is married and works as a supervisor. A free-thinker and lives in a four-room flat with the husband. She leads a sedentary lifestyle. The couple settles their meals outside.

Physical Examination:

In the ward: she was afebrile, BP: 145/72 mm Hg, pulse rate: 88/ minute, respiration rate: 18/ minute, SPO2: 98% and pain score: 0. Her BMI was 25.3 (height: 160cm, weight: 65kg). Normal heart sound S1S2 auscultated. Lung sounds clear, abdomen was soft and non-tender. The ulcer was examined with dry gangrene, and the toe and forefoot were swollen and warm. Both Dorsalis pedis (DP) and Posterior tibial (PT) were non-palpable in the left lower limb, while DP was only palpable in the right lower limb.

Lab or diagnostic tests:

In the ward, she has been ordered with the following lab/diagnostic test: routine tests, blood glucose tests, HbA1c (glycated haemoglobin), urine culture, wound culture and sensitivity, Gram stain smear, lipid panel, renal function test, and urine Protein to Creatinine ratio (PCR)

Refer to the appendix A for detailed lab/diagnostic results.

Therapeutic Modalities:

Mdm Chan's medications included Simvastatin 20mg ON, Atenolo 50mg OM Paracetamol 1g QDS, Glibenclamide 2.5mg OM, Metformin 850mg TDS, and Co-amoxiclav 625mg BD. Subcutaneous soluble insulin (SCSI) Actrapid was prescribed with a sliding scale. She was also ordered with Iodosorb ointment to apply every other day (EOD) to the wound with Melolin dressing.

Referral to diabetes nurse educator (DNE) was arranged. Both Mdm Chan and her husband were keen for self blood glucose monitoring (SBGM). With DNE referral, necessary education for medications, exercise, and complications is taught. No DNE follow-up was arranged, but follow-up at polyclinic was given.

Dietician introduced DM diet to Mdm Chan. A 3 weeks follow-up after discharge was instructed. Mdm Chan was also advised by the podiatrist on proper foot care and special footwear was provided. She was reminded about her follow-up 6 weeks after discharge.

Summary:

Mdm Chan has uncontrolled DM, hypertension, and hyperlipidemia, which have contributed to foot ulcer development. Her blood glucose and lipid

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panel showed abnormalities. Additionally, high HbA1c suggested poor DM control. Low albumin is also found in the liver function test. PCR reflected slight protein elevation.

Though Mdm Chan follows the treatment, she has poor insight and is unsure of what is hypo/hyperglycemia, the manifestations and management.

Moreover, she does not wish to follow the medication regime. She bargains with the DNE to reduce SBGM. She is concerned whether she could travel to Macau 2 days later after discharge. She is managing DM with Oral Hypoglycemic Agents (OHGAs) upon discharge.

Despite Mdm Chan verbalises that she would try to adapt and manage DM better, she finds herself hard to adjust to the new lifestyle and wonder if she is able to do it.

Clinical Reasoning

Introduction

DM is a chronic disorder characterised by the constant elevation of body blood glucose level (Meetoo & Allen, 2010). Mdm Chan has type 2 DM which happens when the pancreas beta-cells produce little or resistance insulin to regulate blood glucose level (Lawal, 2008). Consequently, consumed carbohydrate breaks down into glucose but is unable to store in muscles and fats with effective insulin, thus glucose is absorbed into the bloodstream, developing hyperglycemia (Capaldi, 2008).

DM is prevalent in Singapore (Lee, 2000). 1 out of 11 people aged 18 to 69 has diabetes which is considered the fifth common medical condition

diagnosed and one of the top six disease killer in Singapore (Diabetic Society of Singapore, 2008). Patient with family history of DM, Indians and Malays, gestational diabetes history, physical inactivity and being overweight imposes high risk of developing DM (Health Promotion Board, 2003). When DM arises, patient can develop other diseases and complications.

Conceptual framework

Mdm Chan's data is organised according to Omaha Classification System which allows systemic classification of data, so that every domain including the physiological, health-related behaviour, psychosocial and environmental of patient's health is assessed (Pesut & Herman, 1999).

Physiological Domain

Circulation (DM, hypertension, and hyperlipidemia)

Mdm Chan's random BGM: 22.4 mmol/L and HbA1c: 13.3% suggest that she is in poor control over her DM. When the blood glucose rises, excess glucose attaches to the haemoglobin, producing an elevated HbA1c (LeMone & Burke, 2008). Thus, performing HbA1c, a reliable indicator, on how well she has been managing the DM over the past 3 months.

With hyperglycemia, Mdm Chan can have polyuria and polydipsia as fluid is shifted into the circulation system from the cells through hyperglycemic osmosis (LeMone & Burke, 2008). Moreover, hyperglycemia damages the protective endothelium lining of the arteries (Meeto & Allen, 2010), leading to decreased tissue perfusion as the circulation is interrupted with thickened arteries (LeMone & Burke, 2008). Because of plaques formation and vessels

narrowing, Mdm Chan develops hypertension to sustain the circulation, which in turn causes arterial stiffening with prolonged tension (LeMone & Burke, 2008).

Similarly, hyperlipidemia accelerates arterial hardening with fats deposits, contributing to atherosclerosis which restricts peripheral blood flow, resulting in peripheral vascular disease (PVD) (MayoClinic, 2010). Sometimes, the plaques can be dislodged, forming clot that is dangerous causing stroke and alteration in vascular system (LeMone & Burke, 2008).

In the ward, Mdm Chan is on SCSl Actrapid sliding scale with BGM TDS + 10pm with I/O charting, so that insulin can be titrated and served accordingly based on the responsiveness of glycemic control (LeMone & Burke, 2008).

She has also resumed OHGAs -Metformin (Biguanides) which works to increase the insulin sensitivity to limit hepatic glucose synthesis, restore glucose to muscles and fats, and improve lipid profile (Meetoo & Allen, 2010). With a high dose (usual dose is 500mg, but Mdm Chan is having 850mg metformin), she may experience abdominal discomfort. Thus, administer Metformin after meal to minimise gastrointestinal discomfort (Meetoo & Allen, 2010). Furthermore, avoid serving Metformin when creatinine level is high as it indicates renal deficiency. When it is unable to be excreted in urine, lactic acidosis may develop which is accompanied with rapid breathing, abdominal pain, and vomiting (Jerreat, 2003).

Another OHGAs, Glibenclamide (Sulphonylureas) stimulates pancreas for more insulin release, enhancing glucose uptake in muscles and fats, and decrease liver glucose production (Meetoo & Allen, 2010). Unlike Metformin,
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it is served 30 minutes before meal for desired effects (Meetoo & Allen, 2010). Remind Mdm Chan to eat shortly to avoid hypoglycaemia with sweating, hunger, dizziness, and trembling (LeMone & Burke, 2008).

Atenolol (beta-blocker) is prescribed to control Mdm Chan's hypertension (145/72mm Hg) by decreasing the rate and force of cardiac contraction, thereby lowering blood pressure (LeMone & Burke, 2008). Before serving Atenolol, check apical pulse and omit dose if the apical pulse is <60bpm to avoid sudden plunge of blood pressure (LeMone & Burke, 2008).

With high lipid panel, Mdm Chan is on Simvastatin (statin) to decrease cholesterol profile by the inhibition of HMG-CoA reductase which produces cholesterol (LeMone & Burke, 2008). Administering Simvastatin is important, as it reduces the incidence of cardiovascular complications.

Because of the co-morbidities, treating the diseases together can help to better manage the DM and decelerate the progress of complications as they interlink with one another.

Urinary function (Diabetes nephropathy)

Mdm Chan is at risk of having diabetic nephropathy as abnormality in PCR suggests some kidney problem (Robins, 2010). Hyperglycemia damages vessels of the nephrons leading to glomerulus scarring and protein is passed in the urine (Robins, 2010). Microproteinuria is detected in urinalysis due to small protein leakage in urine. As the disease progresses, proteinuria develops. When protein is lost, there is a decline in plasma protein. Hence, edema is presented as fluid leaks out from the vessels into the tissue

(LeMone & Burke, 2008), resulting in swollen forefoot. Though Mdm Chan's PCR shows slight elevation (0.36 μmol/L) with a correspondent drop of serum albumin (29 g/L), hence effort has to be made to prevent deterioration of kidney function through routine appointment. Thus reinforce the need to attend polyclinic appointment so as to decrease morbidity of renal dysfunction, minimizing disruption to her living.

Neuro-musculo-skeletal function (Foot ulcer with cellulitis)

Nerve impairments cause insensitive sensation which lead patient to be prone to injury without realising it (Ogrin, 2006). She is unsure of how her foot ulcer developed, though there may be a link with the reflexology machine that she is using. No pain is felt, but warmth, erythema, and swelling on the toe and forefoot are present upon palpation. Dry gangrene is observed on the 4th toe. Additionally, PT and DP are non-palpable in the left lower limb; DP is only palpable in the right lower limb. Absence of pulses indicates impaired arterial circulation, probably PVD (Weber & Kelly, 2010). Further investigation is required to detect ischemia in the left lower limb.

Doctor thus started IV Cloxacillin which is effective against Gm positive bacteria (Wilson, Shannon, Shields & Stang, 2007). After which, it is oralised to Co-amoxiclav (Augmentin) for localised infection with same effect (Wilson, Shannon, Shields & Stang, 2007). In conjunction, Iodosorb ointment is applied to absorb debris on the wound and iodine is produced to kill bacteria, facilitating moist wound healing (Smith & Nephew, 2010). Application of Melolin further absorbs exudates and provides comfort due to the cotton material (Smith & Nephew, 2010). Foot ulcer heal slowly, thus in order to

prevent deterioration of the tissue, these supportive wound dressings are applied to fasten recovery.

The podiatry has seen Mdm Chan to cultivate proper foot care and footwear. A special shoe that is light and covered is given to her. It comes with a broad and square base for comfortable fitting of the feet without friction and uniform pressure is ensured (Reiber, Smith, Wallace, Vath, Sullivan, Hayes, Yu, Martin & Maciejewski, 2002).

It is critical for Mdm Chan to continue with podiatry rehabilitation as assessment for regular checking of sensation and manage problems like correct nail cutting, callus debridement, and fungal treatment (Ogrin, 2007). Reinforcement about consequences of foot ulcer can cause infection, progressing to the need for amputation/ lead to sepsis with threat to life (Ogrin, 2006). Therefore, education and appointment given by the podiatry is to be followed strictly and be cautious in maintaining foot care, so as to prevent more foot ulcer from developing and save the current wound to avoid amputation.

Health-Related Behaviours

Medical regime (Omit OHGAs, needle phobia, and defaulted appointments)

Over the years, she omits OHGAs and takes herbal medication. This is fairly dangerous as she is unsure how effective the herbal medication can help to stabilise the blood glucose level. Moreover, she has needle phobia; she does not perform SBGM and defaults follow-ups and thought she could manage DM herself. This mistaken health perception and low responsibility of Mdm

Chan towards her health have to be corrected as she is endangering herself to more devastating complications (LeMone & Burke, 2008).

The referral to DNE is therefore beneficial as it allows assessment of Mdm Chan's profile and work on the issue of needle phobia by introducing the lancet pen which reduces the prickling sensation with fine and fast-retractable needle (Li, Chang, Ng & Manikam, 2007). Hence, Mdm Chan purchased a hypocount machine and essential technique is taught to her and husband. Furthermore, the DNE reinforces the need for OHGAs and instructs her to stop herbal medication to avoid any double dose effect. DNE also teaches Mdm Chan how to recognise and management of hypo/hyperglycemia, diet, exercising, and pamphlets of support groups are provided. Thus, involvement with DNE "incorporates education, motivation, and empowerment" to set her with the right attitude, so as to allow her to develop responsibility to control the DM (Li et al., 2007, p. 34).

Nutrition: fried food, sweet and oily food

Mdm Chan likes outside foods especially fried and sweet stuffs like fried oyster, chendol, and kueh. This is not advisable as high-fats diets cause poor insulin binding to its receptors, making it ineffective (Boylan, 2007).

Because diet plays a vital part in controlling DM, Mdm Chan needs the assistance of the dietician to discuss her food choices, correct her eating habits, in order to achieve a balanced diet. The dietician sets the estimated calories intake as 1500kcal as her overall intake is in excess, thus she is overweight (LeMone & Burke, 2008). Furthermore, she is counselled to do carbohydrate counting (Abbott Nutrition, n. d.). As such, a food chart is

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provided to allow the calculation of various foods with the amount of calories. Though this facilitates meal planning, it should not be used as an approach to determine the blood glucose level (Abbott Nutrition, n. d.). Instead, patient should eat consistent amount and monitor trend for comparison between the food and BGM. By advising her to control the calories intake, the lipid profile can also be better managed and lower risk of DM complications.

Physical activity: seldom exercise

Mdm Chan claims that she has no time for exercise as she is tired after work. However, it is wise to encourage her to engage in regular physical activity as exercising decrease insulin demand because muscle cells help to utilise glucose (Strayer, White-Guthro & Pravikoff, 2009). Polikandrioti and Dokoutsidou (2009) supported that exercise not only improve insulin effectiveness, but also benefit mental health. Cholesterol is also broken down, reducing the risk of heart disease by improving the lipid profile and blood pressure control (Perry & Potter, 2005).

Presence of foot ulcer disallows certain exercises like swimming due to increased risk of infection in the pool (Ogrin, 2007). However, arm exercises 30 minutes every day are suitable for Mdm Chan to engage at home like using dumbbell and stretching band.

Psychosocial Domain

Mental health: stress with too many lifestyle modifications

Upon receiving the instructions, Mdm Chan looks irritable. She groans and frowns, but is fine after the comfort of the husband. The DNE encourages the husband's involvement like accompanying her for appointments and joins her with lifestyle adjustments. With the support from the husband, Mdm Chan is believed to be able to cope better with the initial transition as she is not facing the challenges alone (Funnell & Weiss, 2010).

Mdm Chan also appears anxious with the treatment planned. Though she has agreed to learn SBGM, she has not overcome her needle phobia. She bargains to reduce the frequency of SBGM. Furthermore, she prefers to take the OHGAs at home as most of the time she is dining out. Nonetheless, reinforcement of medication regimes is to be followed because hypoglycaemia would set in when no food is taken shortly after OHGAs (Meetoo & Allen, 2010).

She looks sad when the DNE advised her to forgo her Macau trip that is 2 days after her discharge. DNE explains that it is unsafe for her to go for holiday especially the trip involves many walking and crowded places may cause more injury to the wound. It would be wise if she could abide with the 2 weeks medical leave, but she does not wish to sacrifice her trip. This would be problematic if Mdm Chan does not have self-control despite she is likely to make adaptation to certain behaviour change, high incidence of poor-seeking behaviours may relapse (Sigurdardottir & Jonsdottir, 2008).

Environmental Domain

Residence: near hawker centre

With a hawkker centre located next to her flat, Mdm Chan feels hard to restrict herself from eating there. It may be challenging if she does not have the habit of eating at home, but her decision is essential to maintain her DM, hypertension, and hyperlipidemia in tight control (Capaldi, 2008).

Clinical Reasoning Web

The keystone issue is powerlessness related to lack of perceived personal control over DM management as evidenced by the inability to lead the desired lifestyles, but to accommodate the lifestyle restrictions implemented by healthcare providers.

Management for DM is extensive as it has to be chronically controlled. It is simple to teach patient on self-care approach, but it may be doubtful whether patient would continue the health habits after discharge (Sigurdardottir & Jonsdottir, 2008). Nonetheless, if her preferences are constantly suppressed, powerlessness can be easily aroused, leading her to deviate from the treatment regime. Hence, she exhibits ineffective coping and health maintenance, which in turn contributing to further impaired perception towards her health management when no improvement is seen. This is a vicious cycle, and uncontrolled DM eventually results in complications like sensory impairment, neurovascular dysfunction, wound, etc. It is therefore critical not only to impart the relevant knowledge, but also to empower Mdm Chan to be motivated and be responsible in optimising her DM condition (Asimakopoulou, 2007).

Desired Outcome

Mdm Chan will take responsibility on her health and exhibit positive perception with acceptance of adherence to the recommendations of lifestyle modifications. She understands the management and demonstrates effective coping by participating with the treatment regime and be compliant with care, and involves in making justifiable health decision. No expressions of irritable and uncertainty are observed in Mdm Chan.

Evidence-based Nursing Intervention

Before constructing the plan, it is crucial to explore what has contributed to Mdm Chan's powerlessness. In this case, she feels powerless because of the DM management requires her to adjust her usual routine, and leads a modified lifestyle that she dislikes (Ackley & Ladwig, 2006). Despite this negative perception, basic knowledge of DM management, including medication regime, diet, exercise, SBGM, and complications management, is essential to impart to Mdm Chan for rational decisions during empowerment approach (Petersen, Tribler & Melsted, 2008).

To empower Mdm Chan, the treatment has to be implemented to suit her goals and priorities. According to Funnell and Weiss (2010), patient is the main decision-maker in self-controlling DM. Education can be taught to her, but the nurse cannot make her to be compliant if she is unwilling. In order for Mdm Chan to gain mastery over the DM, initial assessment of her goals is thus essential for a customised plan. This can be achieved through motivational interview by exploring her concerns and values, what are the goals that she may wish to achieve in optimising DM in the long run (Carino,

Coke & Gulanick, 2004). As such, a change may be elicited by Mdm Chan when she is able to contemplate what she can accomplish within her ability. Furthermore, the behaviour may be sustained as it is initiated by her, rather than being forced to change (Leak, Davis, Houchin & Mabrey, 2009). For instance, instead of telling her to follow strictly to the dietician's order, asking her what she can change to induce healthy eating, this would guarantee perseverance and compliance.

Next, an important rule that has to be conveyed to Mdm Chan is the adherence of medication regime, in order to control DM. As long as she takes the OHGAs, the blood glucose could at least be reduced. After which, she could plan how active she wants to be in regulating DM. It is believed that when Mdm Chan is at ease in self-management, she would work harder to produce better performance (Funnell & weiss, 2010). Moreover, being able to attain realistic goal, provides encouragement to Mdn Chan so she can continue to be active in coping with DM (Rodgers, 2004). As such, she could work towards the suboptimal reading before achieving optimal results.

By implementing a standard regime is unbeneficial, be flexible and alter the plan accordingly the health status is much preferred (Funnell & Weiss, 2010). Since Mdm Chan dislikes performing SBGM frequently, she could adjust the number of SBGM according to how well she has been managing DM. Let her know that daily SBGM may be needed initially as her blood glucose level fluctuates. When her status improves, she may perform SBGM on alternate days and progress to performing when necessary, like during sick day, when it has become stable. Unlike rigid plan which requires self-discipline, flexibility allows self-efficacy and facilitates autonomy for self-control over

DM when condition stabilises (Sigurdardottir & jonsdottir, 2008 and Funnell & Wiss, 2010).

Though the effort to establish an individualised care, it may not provide a perfect outcome in controlling the glucose level. Hence, when an ineffective regime is encountered, it needs to be reviewed and discuss with Mdm Chan for possible decisions. This form of collaboration gradually enhances empowerment, as she is consistently involved to work on better control. Therefore, continuous review and seeking new goals from her facilitates patient- centred care, giving her the respect and control over the progress of DM (Funnell & Wiss, 2010).

Evaluation

Mdm Chan understood the cornerstone of DM management is to maintain an optimal blood glucose level. She verbalised the significance of treatment regime, and highlighted her concerns over certain issues. She collaborated with the DNE to establish agreement that she was willing to follow. She felt alright to cancel the Macau trip after weighing the pros and cons, and felt relieved when she was able to reduce the frequency of SBGM when the condition improved. They were still working on how to adhere to the diet regime. Mdm Chan had suggested certain ways, while the DNE was evaluating the possibility and rationalised those unhealthy habits. She is not upset when some of her suggestions were rejected, instead she exhibited positive perception towards her current care plan.