Confidentiality

- All information disclosed within this case study is confidential and permission was granted by the patient depicted in this presentation for said information to be used as a teaching tool.
Aims

• Identify presenting complaint and provide holistic nursing overview
• Pathophysiology
• Identify diagnostics, treatments and interventions used with a nursing focus
• Outline plan of care and goals
• Treaty of Waitangi and Cultural Safety
• Evaluation and health outcomes
• Impact on my nursing
Presenting Complaint

- Female in mid 60’s
- Brought in by ambulance (BIBA) to emergency department (ED) with
  - 2-hour history of intermittent discomfort in jaw and heaviness in both forearms, which developed into constant discomfort
  - Pale, clammy, nauseated
  - IV access in ambulance, 10mg IV Morphine on route, Aspirin 300mg chewed, Glytrin spray x 3 and ECG showing ST elevation
Holistic Nursing Assessment

- European, Female mid 60’s, 65kg
- Works full time as taxi driver, mixed shifts.
- Married with children
- Lives with husband in own home
- Usually active and fit
- ETOH – 4 wines per week.
- Ex smoker - 1994
- No cultural or spiritual affiliations
Past Medical/Surgical History:
- Mild Osteoarthritis (Mild Asthma - not treated, no exacerbations within last year)
- Dyslipidaemia (Raised cholesterol) - not treated

Family History:
- Brother CABG @ 70yrs
- Sister MI @ 60yrs
- Mother angina

Medications: Nil

Mentally:
- no history of depression, dementia, STML

Erickson’s Developmental Stage:
- Integrity vs. Despair
- Reflection on life. Older adults need to look back on their life and feel a sense of fulfillment. Success at this stage leads to feelings of wisdom, while failure results in regret, bitterness, and despair.

Holistic Nursing Assessment continue...
On Examination

• A — airway patent
• B — RR 24, SaO2 100% on 4L oxygen via Hudson mask
• C — Pale, Clammy, diaphoretic skin, HR 120 regular, BP 150/96
• D — GCS 15/15. nauseated, Pain ++

• P — nothing makes it better, constant
• Q — dull. Discomfort in jaw and heaviness in both forearms. Not a pain
• R — radiates into jaw
• S — 12/10
• T — started about 2 hours ago, intermittent initially then constant
• U — unsure of what it is thought it was tooth ache, but knew had to get help. Morphine helped a little bit
Pathophysiology of a Myocardial Infarction

Plaque builds up within the artery – Atherosclerosis

Plaque Ruptures causing blockage

MI occurs when there is a blockage within one of the coronary arteries.

ACC, 2013; CDHB, 2012; Davis et al., 2012; Heart Foundation, 2012; Woods et al., 2012.
Coronary Arteries

• The coronary arteries sit on the outside of the heart and embed into the heart muscle and supply the heart with rich oxygenated blood.

• If the arteries become narrowed or blocked the heart is unable to do its job, effectively starving the heart of oxygen resulting in decreased blood supply to cells and in turn parts of the body.

ACC, 2013; CDHB, 2012; Davis et al., 2012; Heart Foundation, 2012; Woods et al., 2012.
Inside the Coronary Arteries...

- Plaque builds up (atherosclerosis)
  - Inflammatory response causing attraction of inflammatory cells
  - Macrophage cells ingest lipids into the wall of the artery (Foam cells)
  - Smooth muscle cells form a fibrous cap over these fatty deposits = atheroma or plaque causing narrowing
  - This continues until cap becomes weak and splits causing MI

ACC, 2013; CDHB, 2012; Davis et al., 2012; Heart Foundation, 2012; Woods et al., 2012.
• Ischemia as result of a MI can result in mild to significant damage to the heart muscle which in turn leads to decrease ability for the heart to function.

• The heart is unable to pump effectively due to the damage. This is determined by an echocardiogram.
• Cardiac Catheterisation and Subsequent Stenting (PTCA) - Angioplasty

Drug Eluting Stent (DES)

ACC, 2013; CDHB, 2012; Davis et al., 2012; Heart Foundation, 2012; Woods et al., 2012.
Diagnostics, Treatments and Interventions

Communication
- Explanation of what is happening by nurse and doctor inclusive of family throughout

Blood tests
- Troponin I (indicative of damage to heart muscle in most instances) was performed by nursing staff along with CBC.
  - Hs TNI >50000 (N > 16 female)

ECG
- ECG on arrival to ED by Nurse, shows ST elevation
  - Leads V1,V2,V3,V4 Elevation - Anterior MI

Emergency Medication
- IV Morphine, Oxygen, Clexane, loading dose of Ticagrelor
Point of injury

Lead Changes & Wall Injury

LAT (GRC)  ANT (LAD)  ANT (LAD)

INF (RCA)  LAT (GRC)  ANT (LAD)  LAT (GRC)

INF (RCA)  INF (RCA)  ANT (LAD)  LAT (GRC)
• Emergency Angioplasty
  - Due to presentation of pain, ST elevation on ECG
  - Direct stenting to proximal LAD

TIME IS MUSCLE

• Telemetry
  - Transfer to CCU post procedure and telemetry in place to monitor electrical impulses post procedure

• Echocardiogram
  - Performed to indicate damage to heart muscle and treatment.
  - Ejection fraction 35%
Nursing Care – Arrival to Unit

- Handover from Cath lab team
- Post Cath observations for radial approach –
  - Sit 30 to 40 degrees, fully at 30min
  - ½ hourly observations for 2 hours, then hourly for 3 hours
  - Mobilise at 2 hours
  - Re apply pressure if bleed occurs
  - Remove 2-3mls every 10-15min until TR band fully deflated
- Pain/Discomfort - managed
- Medications – discussed later
- Fluids encouraged - to flush dye decrease risk of AKI
- Fasting Bloods (Lipids, Diabetes, TNI, CBC, Biochem)
- Emotional support for diagnosis and reality of near death experience, they can seen themselves as a failure.
- Open communication
- Discharge planning (EDD 2/7)
  - DVD – take heart
  - Recovering form MI folder
  - Angina Action Plan - AAP
  - Referrals – discussed later
  - Identifying risk factors – discussed later
  - Check supports at home
Treaty of Waitangi and Cultural Safety

• Treaty of Waitangi
  – My patient did not identify as Maori if she had I would have ensured the following
    – That her and her Whanau were kept informed and that consent was obtained before any procedures were undertaken.
    – Procedures and care were fully explained and opportunity for questioning offered, privacy maintained by pulling curtains, or offering more private place to discuss care.
    – Offer and refer to the Maori health services if she wanted their involvement.
    – Ensure practice is safe i.e. blue pillow for head, procedure equipment not to be placed on food table, inclusion of family in education etc.

Durie, 2009; MCNZ, 2009
• Cultural Safety
  - Even though my patient had no cultural needs as identified by her, I would still offer the following
    • Chaplin service, tour of unit providing socialisation identifying toilet area, showers, call bell system, TV room, visiting hours etc.
    • Provide privacy and dignity, respect of her values

Durie, 2009; MCNZ, 2009
Contributing Factors (risk factors) for Heart Disease – for this patient

- **Non Modifiable**
  - Family history
  - Age – post menopausal

- **Modifiable**
  - Dyslipidaemia
  - Ex smoker

- **Impact factors**
  - HTN, diabetes, inactivity, stress, increased BMI

- **Suggestions for modifications given inclusive of medication**

NZGG, 2002
Medications

– No previous medications
– **Atorvastatin 40mg OD** initially raising to 80mg as tolerated – stabilises plaque, decreases plaque build up and decrease cholesterol profile
– **Metoprolol 23.75mg OD** - increasing to 45mg as tolerated – reduces the risk of having another MI by 50%, decreases the workload of the heart
– **Cilazipril 0.5mg OD** – strengthens the heart.
– **Aspirin 100mg OD** – thins the blood, decreases clot formation.
– **Ticegralor 90mg BD** – protects the stent, antiplatlet
– **Glytrin spray prn** – relief of angina
– Medication sheets given along with explanations
– Does not require blister packs, will use dosset box
Referrals to Cardiac Multidisciplinary team

- **Occupational Therapist** – to provide guidelines for returning to work, driving and normal daily activities

- **Physiotherapist** – to provide walking plan of gradual return to normal activity

- **Social Worker** – due to inability to work, assess eligibility for benefits

- **Cardiac Rehabilitation Nurse Specialists** – provide education about MI, angioplasty results, risk factor management, recovery, medications, AAP, answer questions and outpatients cardiac rehabilitation programme.
Planning for Discharge and Evaluation

- No driving private motor vehicle for 4 weeks. ETT required for Taxi licence, not before 4 - 6 weeks
- Cardiologist OP appointment approx. 4 - 6 weeks
- 6 week recovery from MI, reinforce gradual return to normal activities as per MDT

Ensure discharged
- Reinforce recovery period of 6 weeks from admission
- Discharge with recovery from and MI folder
- Yellow Card and explanation of medications including importance of continuing them
- AAP and Glytrin
- To see GP within week of going home
- Encourage attendance at Cardiac rehab programme
Patient Outcome

- Nil further pain/discomfort
- Cardiac status stable
- Radial site, nil ooze, swelling, pain or discomfort
- Patient had reasonable understanding of event and subsequent diagnosis
- She had a understanding of modifications to risk factors (Cholesterol)
- Had a plan of how to return to exercise and normal activities like doing the washing, vacuuming, meal prep etc.
- Had understanding of medications and that they are lifelong
Impact on Practice

- Has broadened my understanding of MI and treatment.
- Has made me think about the whole patient journey and the impact on them emotionally and physically.
- A better understanding of risk factors for heart disease.
- More confidence to provide education to my patients and whanau about Ischaemic Heart Disease and modifications.
References

• Canterbury District Health Board (CDHB) (2010). Discharge advice following coronary angiography and coronary angioplasty. [Pamphlet]. N.P.: Author
• Heart Foundation (2011). A guide to recovery after a heart attack. [Pamphlet]. N.P.: Author

Questions?