

Role of Pharmacist in aiding diagnosis – a case of Ozempic (Semaglutide)-induced cholecystitis

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Introduction

Adverse drug reactions (ADRs)-induced hospital admissions significantly adds to disease burden (Oscanoa et al 2017)

Collaborations between members of the healthcare team potentially improves professional practice and healthcare outcomes –by hastening diagnosis and rationalising treatment plan (Reeves et al 2017)

Objective

Pharmacist-led medication reconciliation on admission may help identify acute ADR-related hospital admissions

Clinical Features

43-year old female patient presented to our Emergency Department (ED) with right upper quadrant pain post-meal

ED ASSESSMENT

- Chief Complaint: sharp persistent right upper quadrant (RUQ) pain
- Unable to sleep, not responding to simple analgesia, antacids
- Nausea
- No chest pain, palpitations, syncope
- No cough, SOB (shortness of breath), sore throat, or fever
- No urinary symptoms & normal bowels
- Similar episode 2 weeks ago
- **Recent weight loss of 14 kg attributed by patient to diet and healthy eating habits**

PHYSICAL EXAMINATION

- Awake, alert, chest clear, well perfused, abdomen soft
- tenderness RUQ, Murphy positive
- Bloods : CRP negative, elevated LFTs (liver function tests)
- Abdominal ultrasound : nil biliary pathology

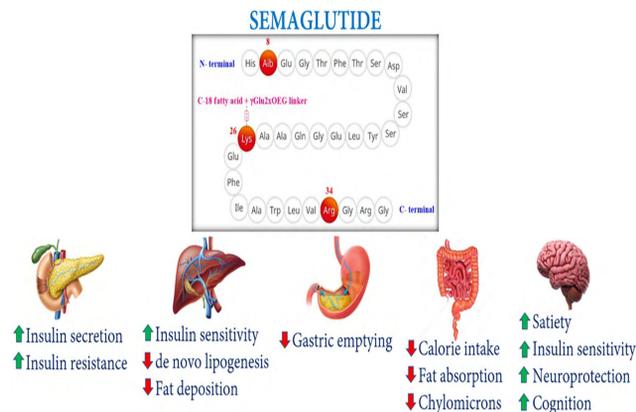
Literature Review

Many reports reveal significant benefits from physician-pharmacist collaborative management (PPCM) in chronic conditions: BP, diabetes control (Reeves et al 2017)

Pharmacy-led medication reconciliation interventions → effective strategy to reduce medication discrepancies with great impact when conducted at admission or discharge (Hwang et al 2017)

Semaglutide : glucagon-like peptide-1 receptor agonist (GLP-1RA) available as subcutaneous & oral formulation -GLP-1RAs : effectively improves glycemic control and cause weight loss

Extensive phase 3 registration trials & cardiovascular outcome trials explore safety of sc and oral semaglutide (E.g. SUSTAIN: Semaglutide Unabated Sustainability in Treatment of Type 2 Diabetes & PIONEER: Peptide Innovation for the Early diabetes treatment) (Smits and Van Raalte 2021)



Pharmacological effects of Semaglutide (Mahapatra et al, 2022)

SCALE-trial → high-dose liraglutide for obesity increased risk of gallbladder events vs placebo (2.5% vs 1.0%)

Recent meta-analysis → increased risk of 28% for cholelithiasis with GLP-1RA treatment

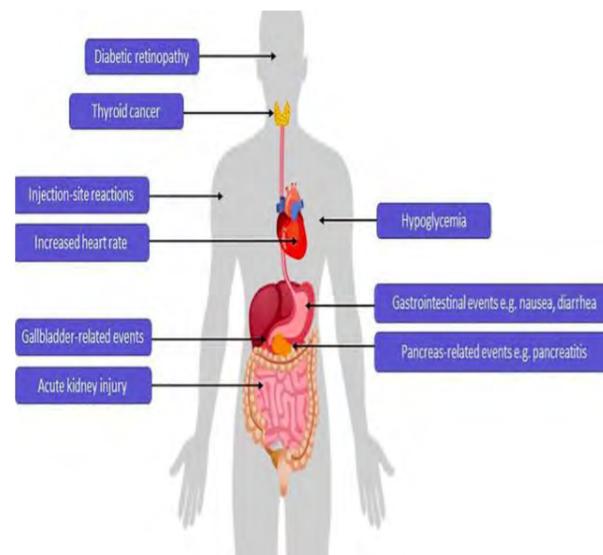
SUSTAIN program → 1.4% patients treated with semaglutide developed cholelithiasis vs 1.9% in placebo

PIONEER program → cholelithiasis occurred more often in the semaglutide-treated group (0.6% vs 0.1% placebo), but risk of cholecystitis was similar

Possible mechanism of gallbladder events – a combination of factors:

- lower gallbladder motility, which enhances biliary sludge formation and bile stones
- change in bile salts, leading to supersaturated bile
- direct adverse effects on the biliary tree

Common (>1%) occurrence of abdominal pain, and infrequent (0.1-1%) occurrence of cholelithiasis and cholecystitis – often requiring cholecystectomy (AMH 2022, Smits and Van Raalte 2021)



Common ADR of Semaglutide (Smits and Van Raalte 2021)

Pharmacist Interventions

Best possible medication history conducted by pharmacist revealed patient was on Ozempic

Pharmacist interview : patient stated → on Ozempic for weight loss for 14 weeks prior to admission

- Episodes of feeling “sick” in the abdomen/pain during Ozempic therapy → pt used to temporarily cease Ozempic which eased the pain
- Pain episode from 2 weeks prior to admission did not respond to ceasing Ozempic & worsened leading to current presentation

Pharmacist-led literature review -?cholestatic LFT derangement - ?ADR-induced acute presentation

Pharmacist-led medication reconciliation on admission highlighted causal relationship of Ozempic-induced cholecystitis underlying current presentation

Case Progress & Outcomes

Based on pharmacist recommendation and due to ongoing abdominal pain, patient was subjected to cholecystectomy

No perioperative complications: Cholelithiasis/choledocholithiasis confirmed during procedure

Post-surgery : Progressed well, LFTs & pain improved; Discharged home on antibiotics & follow up with general surgeon

Discussion

Medication reconciliation: important tool to prevent medication discrepancies & subsequent patient harm at care transitions

Pharmacist-led medication reconciliation captured a complete medical history which helped in identifying a drug-induced ADR leading to the current presentation

Pharmacist-led medication reconciliation may form a vital link in aiding differential diagnosis by filling gaps in medication history

Conclusion

Pharmacist-led medication reconciliation on admission:

- may help identify & resolve unintentional discrepancies between patients' medication lists across transitions in care
- may also aid in diagnosis as exemplified by this case report

References

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