

Cardiovascular Illness and Hypercholesterolemia: What to Do Before Starting Pharmaceutical Therapy

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Abstract

Hypercholesterolemia, also known as high cholesterol, is a condition where there are high levels of cholesterol in the blood. This can lead to the buildup of plaque in the arteries, which can increase the risk of heart disease, heart attacks, and strokes. One way to manage hypercholesterolemia is through pharmaceutical therapy. There are several classes of medications that can be used to treat hypercholesterolemia. The most commonly prescribed are statins, which work by inhibiting the enzyme HMG-CoA reductase, which is responsible for producing cholesterol in the liver. Statins can lower LDL cholesterol (often referred to as "bad" cholesterol) levels by up to 50%. Other medications that can be used to treat hypercholesterolemia include bile acid sequestrates, which bind to bile acids in the intestine and prevent their reabsorption, thereby reducing the amount of cholesterol produced by the liver. Nicotinic acid (niacin) and fibric acid derivatives can also be used to lower cholesterol levels.

Keywords: Pharmaceutical therapy; Epidemiological; Cardiovascular diseases; Chronic metastasis diseases

Introduction

In addition to medication, lifestyle changes such as diet and exercise are also important in managing hypercholesterolemia. Eating a diet low in saturated and trans fats, and high in fruits, vegetables, and whole grains, can help lower cholesterol levels. Regular physical activity can also help improve cholesterol levels and overall heart health. It's important to note that hypercholesterolemia is a chronic condition and medication may need to be taken long-term to maintain cholesterol levels within a healthy range. It's also important to work closely with a healthcare provider to determine the best treatment plan for each individual based on their medical history, risk factors, and other considerations. Moreover, studies have shown that surgical trials are more likely than non-surgical trials to end early and the reasons for these premature terminations are frequently avoidable [1,2].

Clinical trials should never be abandoned since doing so exposes participants to possibly hazardous. The Declaration of Helsinki mandates that all trial data, including unfavourable and inconclusive results, shall be made available to the public in an effort to prevent cessation and no publication. Rates and patterns of trial abandonment and non-publication, however, continue to be an issue. We wanted to assess the rate and trends of cessation and non-publication of clinical trials in prevalent paediatric otolaryngology problems and therapies in light of the considerable results of discontinuation and nonpublication in paediatric studies and other fields of otolaryngology. All patients' records who received otolaryngology consultations at a busy tertiary care hospital between April 30, 2020, and October 1, 2020, had their records examined.

A record was kept of the patient's demographic data, length of stay, COVID-19 status, reason for consultation, and otolaryngology interventions. Using R software, statistical analysis was carried out. Communities and healthcare systems all around the world were ravaged by the SARS-CoV-2 (COVID-19) coronavirus pandemic, which resulted in over 449 million cumulatively confirmed cases and an estimated 5.9 million fatalities. A cross-sectional multi-institutional survey of 55 otolaryngology departments across North America revealed nearly universal cancellations of elective cases at the height of the pandemic. Healthcare personnel adapted routines and procedures

to protect themselves [2]. Otolaryngology attending and residents have continued to practise medicine and accept call across the nation despite these shifts in cases and responses, with the unavoidable exposure to patients with COVID-19 who have been confirmed or are being investigated. Despite the fact that COVID-19's otolaryngologic symptoms, such as olfactory impairment, sneezing, and nasal congestion, have thus far been well-described [3-5].

Discussion

This single-institution study of inpatient otolaryngology consult rates according to COVID-19 status was motivated by the high rates of interventions for oropharyngeal bleeding seen in patients with severe COVID-19 infection, in light of new data challenging the benefit of therapeutic anticoagulation. We specifically wanted to know if individuals with COVID-19 would need more frequent measures to control their bleeding and if they would need an otolaryngology consultation more frequently than patients without COVID-19. From April 30, 2020, to October 1, 2020, otolaryngology was consulted on all of the patients. Patients with inpatient stays after scheduled surgeries were excluded. Test findings dated within 14 days before or after consultation were used to determine COVID-19 status. Even if their positive date was more than 14 days prior to consultation, patients were still regarded as positive if they were receiving treatment for COVID-19-related pneumonia or respiratory failure at the time.

Therapeutic anticoagulation was administered according to varying regimens set by the intensive care unit or Haematology services. Usually, heparin infusions or daily enoxaparin treatment were required. Twelve categories were used to group consultations. Patients

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with trauma were examined for face trauma, laryngeal and temporal bone fractures, and traumatic injury to nearby structures (e.g. facial nerve, parotid duct, etc). Peritonsillar abscess, head-and-neck cellulitis, Pott's puffy tumour, epiglottitis, parotitis, and sialadenitis were among the infections. Epistaxis and oropharyngeal haemorrhage were among the bleeding. Otitis, mastoiditis, hearing loss, vertigo, and auricular infections were all evaluated with otology. Hemorrhage following a tonsillectomy, hardware loosening (such as mandibulomaxillary fixation devices), and potential surgical site infections were all discussed at post-operative consultations. Sinusitis, cerebrospinal fluid leaks, and pituitary tumours were all evaluated using rhinology. Consultations for placement, unintentional decannulation, exchanges, and bleeding from tracheostomy were all covered in the care of tracheostomies [6-8].

Consults to look into malignancy suspicions, head-and-neck cancers already known to exist, and benign endocrine masses were all considered head-and-neck masses. Consults requiring an assessment of the upper airway due to worries about airway compromise or active stridor that wasn't due to a foreign body obstruction were considered to be part of the airway evaluation. The dysphonia category covered consultations for individuals with abnormal phonation that involved an evaluation of the upper airway. If a foreign item was suspected of obstructing the airway or was known to be present, a foreign body consult included an airway assessment. Patients who were worried about aspiration or couldn't handle oral intake had consultations for dysphagia. Hypercholesterolemia is a medical condition characterized by high levels of cholesterol in the blood. High levels of cholesterol can increase the risk of developing heart disease, stroke, and other cardiovascular diseases. While lifestyle changes such as a healthy diet and regular exercise are recommended to manage hypercholesterolemia, pharmaceutical therapy is also a common approach.

There are several classes of medications that can be used to treat hypercholesterolemia. The most commonly prescribed are statins, which work by inhibiting an enzyme involved in cholesterol synthesis. Statins can reduce LDL cholesterol levels by up to 60% and have been shown to decrease the risk of cardiovascular events in both primary and secondary prevention settings. The most common side effects of statins include muscle pain, liver dysfunction, and gastrointestinal symptoms. Another class of medications used to treat hypercholesterolemia is PCSK9 inhibitors. These drugs work by binding to a protein in the liver and preventing it from breaking down LDL cholesterol receptors, which leads to increased clearance of LDL cholesterol from the blood. PCSK9 inhibitors can reduce LDL cholesterol levels by up to 60% and have been shown to significantly decrease the risk of cardiovascular events in patients with hypercholesterolemia. The most common side effects of PCSK9 inhibitors include injection site reactions and flu-like symptoms.

Other medications used to treat hypercholesterolemia include bile acid sequestrates, which bind to bile acids in the intestine and prevent them from being reabsorbed, leading to increased clearance of cholesterol from the blood. Nicotinic acid and fibrates are also used to treat hypercholesterolemia, but they are less commonly prescribed due to their lower efficacy and higher risk of side effects.

In conclusion, pharmaceutical therapy is an important part of the management of hypercholesterolemia. Statins and PCSK9 inhibitors are the most commonly prescribed medications and have been shown to significantly reduce the risk of cardiovascular events in patients with hypercholesterolemia. While these medications are generally safe, they can cause side effects, and patients should discuss the risks and benefits with their healthcare provider. Hypercholesterolemia, or high cholesterol, is a condition in which the levels of cholesterol in the blood

are elevated above normal. This can increase the risk of developing cardiovascular diseases such as heart attack and stroke. One of the primary ways to manage hypercholesterolemia is through the use of pharmaceutical therapy.

Statins are a class of drugs that are commonly prescribed to lower cholesterol levels in the blood. They work by inhibiting the enzyme HMG-CoA reductase, which is responsible for producing cholesterol in the liver. By reducing the production of cholesterol, statins can lower LDL cholesterol levels in the blood, which is the "bad" cholesterol that contributes to the formation of plaques in the arteries. Other drugs that may be used to manage hypercholesterolemia include bile acid sequestrates, which bind to bile acids in the intestine and prevent their absorption, thereby reducing cholesterol levels in the blood. Nicotinic acid, or niacin, can also be used to lower cholesterol levels, but it can cause side effects such as flushing and itching [9,10].

Conclusion

In addition to medication, lifestyle changes such as a healthy diet and regular exercise can also help manage hypercholesterolemia. Eating a diet that is low in saturated and trans fats and high in fiber can help lower cholesterol levels in the blood. Regular exercise can also help improve cholesterol levels by increasing HDL cholesterol, which is the "good" cholesterol that helps remove LDL cholesterol from the blood. Overall, pharmaceutical therapy can be an effective way to manage hypercholesterolemia and reduce the risk of developing cardiovascular diseases. However, it is important to work with a healthcare provider to determine the most appropriate treatment plan based on individual needs and medical history.

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Conflict of Interest

The authors declare that there is no conflict of interest.

References

1. Manojlovic N, Vasiljevic P, Gritsanapan W, Supabphol R, Manojlovic I (2010) Phytochemical and antioxidant studies of *Laurera benguelensis* growing in Thailand. *Biol Res* 43: 169–176.
2. Mohammadi M, Zambare V, Malek L, Gottardo C, Suntres Z, et al. (2020) Lichenochromes: extraction, purification, characterization, and application as potential anticancer agents. *Expert Opin Drug Discov* 15: 575-601.
3. Aslan A, Güllüce M, Sökmen M, Adıgüzel A, Sahin F, et al. (2006) Antioxidant and Antimicrobial Properties of the Lichens *Cladonia foliacea*, *Dermatocarpon miniatum*, *Evernia divaricata*, *Evernia prunastri*, and *Neofuscella pulla*. *Pharmaceutical Biology* 44: 247-252.
4. Kahrman N, Yazici K, Arslan T, Aslan A, Karaoglu SA, et al. (2011) Chemical Composition and Antimicrobial Activity of the Essential Oils from *Evernia prunastri* (L.).
5. Kosanic M, Rankovic B, Stanojkovic T, Vasiljevic P, Manojlovic N (2014) Biological activities and chemical composition of lichens from Serbia. *Excli J*.
6. Shankar S, Pangeni R, Park JW, Rhim JW (2018) Preparation of sulfur nanoparticles and their antibacterial activity and cytotoxic effect. *Mater Sci Eng C Mater Biol Appl* 92: 508-517.
7. Pavlovic V, Stojanovic I, Jadrnanin M, Vajs V, Djordjevic I, et al. (2012) Effect of four lichen acids isolated from *Hypogymniaphysodes* on viability of rat thymocytes. *Food Chem Toxicol*.
8. Shcherbakova A, Nyugen L, Koptina A, Backlund A, Shurgin A, et al. (2016) Screening of compounds of *Evernia prunastri* (L.) for their antiproliferative activity in glioblastoma cells. *Planta Medica*.

9. Shier WT (1991) Mammalian Cell Culture on \$5 a Day. A Laboratory Manual of Low Cost Methods.
10. Ślusarczyk J, Adamska E, Czerwik-Marcinkowska J (2021) Fungi and algae as sources of medicinal and other biologically active compounds: A review. Nutrients.