Review of Contemporary Philosophy
ISSN: 1841-5261, e-ISSN: 2471-089X
Vol 22 (1), 2023
Pp 2795 - 2803

Sinus Bradycardia: Nursing Assessment and Interventions in Cardiovascular Care-An Updated Review

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Abstract:

Background:
Sinus bradycardia is a condition characterized by a heart rate below 60 beats per minute, originating from the sinoatrial (SA) node. It can be classified as either physiological or pathological, with various intrinsic and extrinsic factors contributing to its development. It is often asymptomatic but can present symptoms such as fatigue, dizziness, or syncope in some cases. This condition is particularly common in older adults and athletes but may also be observed in individuals with underlying cardiovascular or systemic diseases.

Aim:
This review aims to explore the nursing assessment and interventions for managing sinus bradycardia in cardiovascular care. It provides insights into the pathophysiology, causes, risk factors, diagnostic approaches, and management strategies for this arrhythmia.

Methods:
This review examines the clinical presentation, diagnostic tools such as electrocardiography (ECG), and management protocols for sinus bradycardia. Data are gathered from relevant literature, including case studies, clinical trials, and existing guidelines on the topic.

Results:
The primary diagnostic tool for sinus bradycardia is the ECG, which confirms the characteristic heart rhythm of less than 60 bpm with regular sinus waves. Intrinsic causes include myocardial infarction and

degenerative heart disease, while extrinsic factors may involve medications, hypothyroidism, or hypoxia. Symptomatic bradycardia may require interventions such as atropine or the use of a pacemaker.

Conclusion:
Sinus bradycardia is a multifactorial condition that requires thorough assessment and management. Nursing interventions focus on monitoring vital signs, assessing the patient's clinical status, and intervening appropriately, including medication review and coordination with medical teams for potential pacemaker implantation.

Keywords: Sinus bradycardia, nursing interventions, cardiovascular care, electrocardiogram, pacemaker, nursing assessment, arrhythmia management.

Received: 10 october 2023 **Revised:** 24 November 2023 **Accepted:** 08 December 2023

Introduction:

The sinoatrial (SA) node serves as the primary pacemaker of the heart and is an essential part of its conduction system. Positioned subepicardially, it adopts a crescent shape. The SA node is innervated by both the vagus and sympathetic nerves, while its blood supply is derived from the sinoatrial nodal artery. In approximately 60% of cases, this artery branches from the right coronary artery, while in 40% it originates from the left circumflex coronary artery [1][2]. Sinus bradycardia, defined as a heart rhythm originating from the sinus node at a rate below 60 beats per minute (bpm), reflects appropriate cardiac depolarization. The diagnosis is confirmed through an electrocardiogram (ECG) showing a normal sinus rhythm with a rate under 60 bpm. The criteria for normal sinus rhythm include regular rhythm with a P wave preceding each QRS complex; an upright P wave in leads I and II, and a biphasic P wave in V1; a maximum P wave height of ≤2.5 mm in leads II and III; and a rhythm rate between 60 and 100 bpm [3][4].

Causes

Sinus bradycardia can be attributed to numerous intrinsic and extrinsic factors [5][6][7][8][9][10].

Intrinsic Etiologies

Several intrinsic conditions contribute to the development of sinus bradycardia. These include chest trauma, ischemic heart disease, acute myocardial infarction, both acute and chronic coronary artery disease, and the repair of congenital heart defects. Other conditions such as sick sinus syndrome, radiation therapy, amyloidosis, pericarditis, Lyme disease, rheumatic fever, collagen vascular diseases, myocarditis, neuromuscular disorders, X-linked muscular dystrophy, familial disorders, and inherited channelopathies may also cause this condition.

Extrinsic Etiologies

External factors that contribute to sinus bradycardia encompass vasovagal stimulation (e.g., endotracheal suctioning), carotid sinus hypersensitivity, and various medications including beta-blockers, calcium channel blockers, digoxin, ivabradine, clonidine, reserpine, adenosine, cimetidine, antiarrhythmic agents (Classes I-IV), lithium, amitriptyline, narcotics, cannabinoids, as well as conditions like hypothyroidism, sleep apnea, hypoxia, intracranial hypertension, hyperkalemia, and anorexia nervosa.

Epidemiology of Sinus Bradycardia

Sinus bradycardia is a prevalent arrhythmia that affects various populations, with its occurrence increasing with age. It is particularly common among older adults, with studies indicating that approximately 1 in 600 adults over the age of 65 experience sinus node dysfunction, a condition that is frequently associated with bradycardia. Additionally, sinus bradycardia is often observed in athletes, especially those engaged in endurance sports, as a result of enhanced vagal tone. The overall prevalence of sinus bradycardia varies across different age groups and populations, and it can occur in both symptomatic and asymptomatic forms. The condition is often observed in individuals with underlying cardiac or systemic diseases, including ischemic heart disease, hypertension, and congestive heart failure, which can contribute to the dysfunction of the sinoatrial (SA) node. Although sinus bradycardia is commonly diagnosed in older

adults, its incidence among younger populations is typically less frequent but more pronounced in highly trained athletes, where it can be a normal physiological adaptation due to increased parasympathetic activity.

In terms of gender distribution, sinus bradycardia does not significantly favor one gender over the other. However, the underlying causes and clinical manifestations may differ, with women potentially exhibiting higher rates of bradycardia in the context of hyperthyroidism or other hormonal changes. Furthermore, sinus bradycardia can be secondary to medication use, such as beta-blockers or calcium channel blockers, which are prescribed for various cardiovascular conditions. Therefore, the condition's epidemiology is closely linked to both the aging process and the prevalence of other cardiovascular and systemic diseases, which underscores the importance of monitoring at-risk populations for early detection and management.

Pathophysiology of Sinus Bradycardia

Sinus bradycardia occurs when the sinoatrial (SA) node generates an impulse at a rate less than 60 beats per minute (bpm), which is slower than the typical resting heart rate. The SA node, located in the right atrium, is the primary pacemaker of the heart. It initiates electrical impulses that regulate heart rate by coordinating the contraction of the atria and ventricles. Under normal conditions, these impulses are conducted through the atria to the atrioventricular (AV) node, and subsequently to the ventricles. This process ensures a coordinated heart rate and rhythm necessary for optimal cardiac output. Several mechanisms can lead to sinus bradycardia, all of which involve disruptions in the normal electrical conduction system of the heart. The most common mechanism is increased vagal (parasympathetic) tone, which slows the electrical activity of the SA node. This vagal influence is typically seen in healthy individuals, such as athletes, where it represents a physiological adaptation to increased cardiovascular efficiency at rest. However, excessive vagal stimulation can also be pathological, occurring in conditions such as hypoxia, increased intracranial pressure, or as a side effect of certain medications like beta-blockers.

Another significant cause of sinus bradycardia is intrinsic SA node dysfunction. This can result from degenerative changes in the heart's conduction system, often due to aging, ischemic heart disease, or prior myocardial infarction. When the SA node is unable to generate electrical impulses at an appropriate frequency, the heart rate slows, leading to bradycardia. This dysfunction can be exacerbated by structural changes in the heart, such as fibrosis or inflammation, which may impair the electrical conductivity within the SA node. Moreover, bradycardia can occur due to extrinsic factors, such as medications (e.g., beta-blockers, calcium channel blockers, or digoxin), which inhibit the conduction of electrical impulses, or conditions like hypothyroidism, electrolyte imbalances, or sleep apnea, which affect the autonomic nervous system's control over the heart. These disruptions ultimately lead to an abnormal slowing of the heart rate, potentially resulting in inadequate cardiac output, especially in symptomatic cases.

Risk Factors

Sinus bradycardia is commonly observed in adults over the age of 65 and in young athletes of both sexes. Epidemiological data indicate that one in every 600 adults over 65 experiences sinus node dysfunction. However, more research is needed to better understand the prevalence of sinus bradycardia in the general population both in the United States and globally [11].

Assessment

Most individuals with sinus bradycardia are asymptomatic. Healthy young adults and athletes typically exhibit increased vagal tone, which keeps them in a state of sinus bradycardia during rest. Similarly, older adults often experience sinus bradycardia during sleep, which is a consequence of the aging sinoatrial node. A thorough medical history is essential to correlate the symptoms seen in an electrocardiogram with the clinical presentation. Patients who exhibit symptoms may report fatigue, exercise intolerance, lightheadedness, dizziness, syncope or presyncope, exacerbation of anginal symptoms, worsening heart failure, or cognitive slowing. During the patient history, healthcare providers should address relevant factors such as recent medication changes, overdose, chest pain, shortness of

breath, history of myocardial infarction, episodes of palpitations, chest trauma, rash, recent tick bites, streptococcal pharyngitis, and a family history of sinus bradycardia or muscular dystrophy. Additionally, findings from the physical examination should complement the patient's medical history [12][13].

Diagnostic Approaches for Sinus Bradycardia

The diagnosis of sinus bradycardia is based primarily on clinical symptoms and electrocardiographic (ECG) findings. The ECG is the gold standard for confirming the diagnosis, as it allows for the visualization of the heart's electrical activity, including the identification of the characteristic low heart rate of less than 60 beats per minute (bpm) along with normal sinus rhythm. On an ECG, sinus bradycardia is identified by the presence of a regular P-wave preceding every QRS complex, with a rhythm that is slower than normal but otherwise maintains the typical pattern of a sinus rhythm. The P-wave, which represents atrial depolarization, should be upright in leads I and II, and biphasic in lead V1. Furthermore, the amplitude of the P-wave is generally less than or equal to 2.5 mm in leads II and III. However, while the ECG provides essential information regarding the heart's electrical rhythm, it does not identify the underlying cause of sinus bradycardia. Therefore, a thorough clinical evaluation is necessary to determine whether the bradycardia is physiological or pathological. The patient's medical history plays a pivotal role in this assessment, as it can help identify potential underlying causes, such as cardiovascular diseases, thyroid disorders, or previous cardiac surgeries. For instance, patients with a history of myocardial infarction may have ischemic damage to the SA node, contributing to the development of bradycardia.

In addition to the ECG and medical history, laboratory tests are often employed to investigate potential contributing factors. Thyroid function tests are critical, as hypothyroidism is a known cause of bradycardia. Blood tests for electrolyte imbalances, such as potassium or calcium levels, should also be conducted, as these can significantly affect cardiac conduction. Further diagnostic investigations may include imaging studies, such as echocardiograms, to assess for structural heart disease or to rule out other cardiac conditions that may contribute to bradycardia. In cases where sinus bradycardia is suspected to be related to medication use, a detailed review of the patient's drug history is essential. Common drugs that may induce bradycardia include beta-blockers, calcium channel blockers, and digoxin. Identifying these medications and assessing their dosage and potential interactions can help determine whether the bradycardia is drug-induced. Additionally, 24-hour Holter monitoring may be used to assess heart rate variability over time, providing further insights into whether the bradycardia is persistent or intermittent. If the bradycardia is associated with symptoms such as dizziness or syncope, additional tests like an electrophysiological study may be recommended to assess the electrical conduction system in more detail. Thus, the diagnostic approach to sinus bradycardia combines electrocardiographic analysis, clinical evaluation, laboratory tests, and patient history to determine the underlying cause and guide appropriate management.

Evaluation

The cornerstone of evaluating patients presenting with symptoms of sinus bradycardia lies in the collection of a detailed history and physical examination. Vital signs such as respiratory rate, blood pressure, temperature, and heart rate should be recorded, and an electrocardiogram should be performed. Critical to this evaluation is determining whether the patient is hemodynamically unstable, which involves assessing for high blood pressure, altered mental status, or respiratory distress. If the patient is asymptomatic, athletic, and healthy, sinus bradycardia may be considered a normal physiological condition. Conversely, in older patients, sinus bradycardia may be indicative of a compromised sinus node. Patients with congestive heart failure frequently present with sinus bradycardia, likely due to inadequate blood supply to the sinus node from the right coronary artery or left circumflex artery, a consequence of underlying ischemic heart disease [14].

Medical Management

For patients diagnosed with sinus bradycardia, the first step is to assess hemodynamic stability. If the patient is found to be hemodynamically unstable, intravenous (IV) atropine should be administered. If

the symptoms persist and the heart rate remains insufficient, a temporary pacemaker may be necessary. In patients presenting with signs of acute myocardial infarction (MI) but who are hemodynamically stable, appropriate treatment for MI should be initiated. For those without signs of MI, diagnostic workup should include screening for infectious causes (such as chest X-ray, blood cultures, urine analysis, viral panel) and thyroid function tests. If an infectious or thyroid abnormality is identified, treatment should be tailored to address these underlying issues, followed by re-evaluation. A review of the patient's medication list is crucial to identify any drugs that could contribute to bradycardia. In cases where comorbid conditions necessitate the use of medications that may be contributing to the bradycardia, the patient may become a candidate for a permanent pacemaker [15].

Nursing Management

Effective nursing management involves a comprehensive physical assessment of the patient, ensuring the evaluation of vital signs, with particular focus on heart rate. This becomes especially pertinent prior to the administration of medications that may influence heart rate or blood pressure. Should the heart rate fall below 60 beats per minute, it is essential to inform the physician or advanced practice provider before administering any medications that could further lower the heart rate. Immediate notification of the physician or advanced practice provider is crucial in the event of the patient experiencing symptoms such as shortness of breath, hypotension, or chest pain. Any other significant changes in the patient's condition should also be communicated without delay [15].

Coordination of Care

An effective approach to the management of sinus bradycardia includes patient education, particularly for those at risk of the rhythm. Establishing closed-loop communication between patients and their healthcare providers significantly contributes to the enhancement of patient management.

Health Teaching and Health Promotion

There are numerous resources available to nurses for educating patients about sinus bradycardia and its potential symptomatic complications. Upon identification of this rhythm in patients presenting to the hospital or clinic, it is advisable to provide them with educational pamphlets, assuming they are available at the facility.

Other Issues

There is an increasing clinical consensus to lower the diagnostic threshold for sinus bradycardia to less than 50 beats per minute, given the considerable population with a resting heart rate between 50 and 60 bpm. However, the current diagnostic criteria remain at a rate of less than 60 bpm, with the American College of Cardiology/American Heart Association/American College of Physicians–American Society of Internal Medicine (ACC/AHA/ACP–ASIM) Task Force being the sole entity recommending a threshold of 50 bpm for diagnosis [4, 16].

Nursing Intervention Plans for Long-Term Care in Sinus Bradycardia

Long-term care for patients with sinus bradycardia involves comprehensive nursing interventions aimed at improving patient outcomes, enhancing quality of life, and preventing complications. Nurses play a crucial role in monitoring, educating, and providing support to patients diagnosed with this condition, especially when it is chronic or symptomatic. The following nursing intervention plans outline key areas of focus for the ongoing care of patients with sinus bradycardia.

1. Monitoring and Assessment

Continuous and systematic monitoring is essential for managing sinus bradycardia, particularly in patients with underlying cardiovascular conditions. Nurses should regularly assess the patient's heart rate, rhythm, and blood pressure, noting any deviations from baseline values. This can be achieved through continuous ECG monitoring or periodic assessments, depending on the severity of the bradycardia and the patient's overall condition. A key part of the assessment involves checking for signs of inadequate perfusion,

such as dizziness, syncope, fatigue, or shortness of breath, which may indicate that the heart rate is insufficient to meet the body's needs. Nurses should be vigilant for any changes in symptoms and promptly notify the physician or advanced practice provider if the patient becomes symptomatic. If bradycardia worsens or persists despite treatment, further diagnostic workup, such as a Holter monitor or electrophysiological study, may be necessary to assess the progression of the condition and guide management.

2. Patient Education

Patient education is a cornerstone of long-term management. Nurses should provide clear explanations regarding sinus bradycardia, its causes, and potential complications. Educating patients about the importance of medication adherence, lifestyle changes, and recognizing symptoms of worsening bradycardia is critical in managing the condition effectively. For example, if the patient is prescribed medications such as beta-blockers or calcium channel blockers, nurses should ensure that the patient understands the importance of taking these medications as prescribed and not abruptly stopping them without consulting a healthcare provider. Additionally, nurses should inform patients about the signs of bradycardia-related complications, such as dizziness or fainting, and advise them on when to seek medical help. Education on lifestyle modifications, such as reducing stress, avoiding excessive alcohol consumption, and maintaining a healthy diet and exercise regimen, is also important. Nurses should tailor education to the individual patient's needs and capabilities, ensuring the patient and their family are well-informed and equipped to manage the condition at home.

3. Promoting Autonomic Balance

Sinus bradycardia can sometimes be exacerbated by excessive parasympathetic (vagal) tone, especially in patients who are not athletes. Nurses should help patients manage autonomic balance through non-pharmacologic interventions, such as relaxation techniques, biofeedback, or guided deep breathing exercises, which can help reduce vagal stimulation and support normal heart rate function. In patients with bradycardia related to autonomic dysfunction, nurses should encourage the patient to avoid triggers that may exacerbate the condition, such as excessive use of medications like opioids or sedatives. Maintaining a calm, low-stress environment is essential in ensuring that vagal stimulation remains under control.

4. Medication Management and Adjustment

Patients with sinus bradycardia often require pharmacologic interventions, such as the use of atropine or pacing devices, depending on the severity of the condition and the presence of symptoms. Nurses should carefully monitor for side effects of medications, such as dizziness, hypotension, or worsening bradycardia, which may require dose adjustments. In some cases, medications that contribute to bradycardia (e.g., beta-blockers, digoxin) may need to be reduced or switched under the guidance of a physician. Nurses should collaborate with the healthcare team to ensure that medications are appropriately titrated to minimize adverse effects while still addressing the underlying causes of bradycardia.

5. Planning for Advanced Care

For patients with more severe or refractory sinus bradycardia, such as those with heart failure or significant conduction system disease, advanced care interventions may be necessary. Nurses should facilitate discussions regarding advanced care options, including the potential need for a permanent pacemaker or other implantable devices. Providing emotional support and counseling for patients facing these decisions is important to help them understand the benefits and risks of various interventions. Nurses can assist in scheduling preoperative assessments and postoperative care as needed, ensuring patients are informed and prepared for any surgical procedures or device implantation.

6. Collaborative Care

Sinus bradycardia often requires a multidisciplinary approach, especially in patients with coexisting cardiac conditions. Nurses should collaborate with cardiologists, primary care providers, and other healthcare professionals to develop an individualized care plan that addresses the patient's specific

needs and goals. Regular follow-up visits with cardiologists may be necessary to assess the effectiveness of treatment strategies and make adjustments as needed. Additionally, nurses should assist in coordinating care with other healthcare providers, including physiotherapists for rehabilitation if needed, and social workers to address any psychosocial concerns related to the patient's condition, particularly if the patient is experiencing limitations in daily activities or quality of life.

7. Psychosocial Support

Chronic conditions like sinus bradycardia can lead to feelings of anxiety, depression, or frustration, especially if the patient is experiencing symptoms like fatigue or dizziness that interfere with normal activities. Nurses should assess for any signs of emotional distress and provide appropriate psychosocial support or referrals to counseling services if needed. Encouraging patients to engage in support groups or counseling can help them manage the emotional impact of living with a chronic heart condition. It is essential to address the mental health aspect of care to improve the overall well-being of the patient and ensure they are equipped to manage their health condition effectively. In conclusion, nursing interventions for long-term care of sinus bradycardia focus on continuous monitoring, patient education, medication management, and promoting a healthy autonomic balance. Nurses should work closely with the healthcare team to implement individualized care plans, adjust medications as needed, and provide emotional and psychosocial support to enhance the patient's quality of life. Through comprehensive and collaborative care, patients with sinus bradycardia can manage their condition effectively and minimize the risks of complications.

Conclusion:

Sinus bradycardia is a common arrhythmia that presents challenges in both diagnosis and management. It occurs when the sinoatrial node generates electrical impulses at a rate of fewer than 60 beats per minute, leading to a slowed heart rate. While some individuals, such as athletes, experience this condition as a normal physiological adaptation, others may have underlying cardiac or systemic diseases that contribute to its development. For these patients, bradycardia may indicate more serious conditions such as ischemic heart disease, myocardial infarction, or thyroid dysfunction. In the diagnostic process, the electrocardiogram (ECG) plays a crucial role in confirming the presence of sinus bradycardia by detecting the characteristic slow heart rate and the regular P waves preceding each QRS complex. However, the ECG alone does not provide insight into the underlying cause of the bradycardia. As such, comprehensive patient evaluation, including a detailed medical history, laboratory tests, and assessment for potential medication use, is critical. This evaluation helps differentiate between physiological and pathological causes, ensuring that appropriate interventions are implemented. From a nursing perspective, effective management of sinus bradycardia revolves around thorough assessment and careful monitoring of vital signs. Nurses must be vigilant when assessing heart rate, especially when administering medications that may affect heart rate or blood pressure. Immediate notification of the healthcare provider is essential if the heart rate falls below 60 bpm, and interventions such as atropine or the use of a pacemaker may be required for symptomatic patients. Additionally, a careful review of medications is necessary to determine if drugs are contributing to the bradycardia. While sinus bradycardia is frequently observed in older adults, it is also common among younger, highly trained athletes who experience an enhanced vagal tone, which slows their resting heart rate. In these individuals, the condition may not be problematic, but it should still be monitored closely. Symptomatic bradycardia, however, can result in decreased cardiac output, which may necessitate medical interventions such as atropine or a pacemaker to maintain hemodynamic stability. In conclusion, the management of sinus bradycardia requires a multidisciplinary approach, with nursing professionals playing a critical role in monitoring, assessing, and intervening when necessary. Early recognition of symptomatic bradycardia and prompt intervention can help prevent complications and improve patient outcomes. Comprehensive management, including both pharmacological and non-pharmacological treatments, ensures that patients with this condition receive optimal care and support. The ongoing assessment of at-risk populations is also essential to improve early detection and enhance the quality of care provided to patients with sinus bradycardia.

References:

1. Thery C, Gosselin B, Lekieffre J, Warembourg H. Pathology of sinoatrial node. Correlations with electrocardiographic findings in 111 patients. Am Heart J. 1977 Jun;93(6):735-40.
2. Truex RC, Smythe MQ, Taylor MJ. Reconstruction of the human sinoatrial node. Anat Rec. 1967 Dec;159(4):371-8.
3. Spodick DH. Normal sinus heart rate: sinus tachycardia and sinus bradycardia redefined. Am Heart J. 1992 Oct;124(4):1119-21.
4. Kadish AH, Buxton AE, Kennedy HL, Knight BP, Mason JW, Schuger CD, Tracy CM, Boone AW, Elnicki M, Hirshfeld JW, Lorell BH, Rodgers GP, Tracy CM, Weitz HH. ACC/AHA clinical competence statement on electrocardiography and ambulatory electrocardiography. A report of the ACC/AHA/ACP-ASIM Task Force on Clinical Competence (ACC/AHA Committee to Develop a Clinical Competence Statement on Electrocardiography and Ambulatory Electrocardiography). J Am Coll Cardiol. 2001 Dec;38(7):2091-100.
5. Silvestri NJ, Ismail H, Zimetbaum P, Raynor EM. Cardiac involvement in the muscular dystrophies. Muscle Nerve. 2018 May;57(5):707-715.
6. Gucev Z, Tasic V, Jancevska A, Jordanova NP, Koceva S, Kuturec M, Sabolic V. Friedreich's ataxia (FA) associated with diabetes mellitus type 1 and hypertrophic cardiomyopathy: analysis of a FA family. Med Arh. 2009;63(2):110-1.
7. Milanesi R, Baruscotti M, Gnecchi-Ruscone T, DiFrancesco D. Familial sinus bradycardia associated with a mutation in the cardiac pacemaker channel. N Engl J Med. 2006 Jan 12;354(2):151-7.
8. Heckle MR, Nayyar M, Sinclair SE, Weber KT. Cannabinoids and Symptomatic Bradycardia. Am J Med Sci. 2018 Jan;355(1):3-5.
9. Nof E, Luria D, Brass D, Marek D, Lahat H, Reznik-Wolf H, Pras E, Dascal N, Eldar M, Glikson M. Point mutation in the HCN4 cardiac ion channel pore affecting synthesis, trafficking, and functional expression is associated with familial asymptomatic sinus bradycardia. Circulation. 2007 Jul 31;116(5):463-70.
10. Valaperta R, De Siena C, Cardani R, Lombardia F, Cenko E, Rampoldi B, Fossati B, Brigonzi E, Rigolini R, Gaia P, Meola G, Costa E, Bugiardini R. Cardiac involvement in myotonic dystrophy: The role of troponins and N-terminal pro B-type natriuretic peptide. Atherosclerosis. 2017 Dec;267:110-115.
11. Brodsky M, Wu D, Denes P, Kanakis C, Rosen KM. Arrhythmias documented by 24 hour continuous electrocardiographic monitoring in 50 male medical students without apparent heart disease. Am J Cardiol. 1977 Mar;39(3):390-5.
12. Sanders P, Kistler PM, Morton JB, Spence SJ, Kalman JM. Remodeling of sinus node function in patients with congestive heart failure: reduction in sinus node reserve. Circulation. 2004 Aug 24;110(8):897-903.
13. Dobrzynski H, Boyett MR, Anderson RH. New insights into pacemaker activity: promoting understanding of sick sinus syndrome. Circulation. 2007 Apr 10;115(14):1921-32.
14. Dobrzynski H, Anderson RH, Atkinson A, Borbas Z, D'Souza A, Fraser JF, Inada S, Logantha SJ, Monfredi O, Morris GM, Moorman AF, Nikolaidou T, Schneider H, Szuts V, Temple IP, Yanni J, Boyett MR. Structure, function and clinical relevance of the cardiac conduction system, including the atrioventricular ring and outflow tract tissues. Pharmacol Ther. 2013 Aug;139(2):260-88.
15. Bernstein AD, Parsonnet V. Survey of cardiac pacing in the United States in 1989. Am J Cardiol. 1992 Feb 01;69(4):331-8.
16. Hafeez, Y., Grossman, S. A., & Pratt, N. J. (2023). Sinus Bradycardia (Nursing). In *StatPearls [Internet]*. StatPearls Publishing.

بطء ضربات القلب الجيبي: التقييم التمريضي والتدخلات في الرعاية القلبية الوعائية - مراجعة محدثة

الملخص:

الخلفية :بطء ضربات القلب الجيبي هو حالة تتميز بمعدل ضربات قلب أقل من 60 نبضة في الدقيقة، وتبدأ من العقدة الجيبية الأذينية. يمكن تصنيفه على أنه فيزيولوجي أو مرضي، حيث تساهم العوامل الداخلية والخارجية في تطوره. وغالبًا ما يكون بدون أعراض، ولكنه قد يظهر أعراضًا مثل التعب، والدوار، أو الإغماء في بعض الحالات. وتعد هذه الحالة شائعة بشكل خاص في كبار السن والرياضيين، ولكن يمكن ملاحظتها أيضًا في الأفراد الذين يعانون من أمراض قلبية أو أمراض نظامية أساسية.

الهدف :تهدف هذه المراجعة إلى استكشاف التقييم التمريضي والتدخلات لإدارة بطء ضربات القلب الجيبي في الرعاية القلبية الوعائية. تقدم المراجعة رؤى حول الفيزيولوجيا المرضية، والأسباب، وعوامل الخطر، والأساليب التشخيصية، واستراتيجيات الإدارة لهذه الحالة.

الطرق :تستعرض هذه المراجعة العرض السريري، والأدوات التشخيصية مثل تخطيط القلب(ECG) ، وبروتوكولات الإدارة لبطء ضربات القلب الجيبي. يتم جمع البيانات من الأدبيات ذات الصلة، بما في ذلك دراسات الحالات، والتجارب السريرية، والإرشادات الحالية حول الموضوع.

النتائج :أداة التشخيص الرئيسية لبطء ضربات القلب الجيبي هي تخطيط القلب، الذي يؤكد الإيقاع القلبي المميز بأقل من 60 نبضة في الدقيقة مع موجات جيبية منتظمة. تشمل الأسباب الداخلية احتشاء العضلة القلبية وأمراض القلب التنكسية، بينما قد تتضمن العوامل الخارجية الأدوية، وقصور الغدة الدرقية، أو نقص الأوكسجين. قد يتطلب البطء القلبي العرضي تدخلات مثل الأتروبين أو استخدام جهاز تنظيم ضربات القلب.

الخاتمة :يعد بطء ضربات القلب الجيبي حالة متعددة العوامل تتطلب تقييمًا وإدارة دقيقة. تركز التدخلات التمريضية على مراقبة العلامات الحيوية، وتقييم الحالة السريرية للمريض، والتدخل بشكل مناسب، بما في ذلك مراجعة الأدوية والتنسيق مع الفرق الطبية لزرع جهاز تنظيم ضربات القلب إذا لزم الأمر.

الكلمات المفتاحية: بطء ضربات القلب الجيبي، التدخلات التمريضية، الرعاية القلبية الوعائية، تخطيط القلب، جهاز تنظيم ضربات القلب، التقييم التمريضي، إدارة اضطرابات الإيقاع.