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Cushing Disease: Diagnosis, Treatment, Management, Nursing Interventions-An Updated Review

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Abstract:

Background: Cushing disease is a rare endocrine disorder characterized by the overproduction of adrenocorticotropic hormone (ACTH), usually caused by a pituitary adenoma. This condition leads to excessive cortisol secretion from the adrenal glands, resulting in a range of clinical manifestations such as weight gain, hypertension, glucose intolerance, and psychiatric disturbances. The disease is predominantly seen in women aged 50 to 60 years and can often remain undiagnosed for several years. Untreated, Cushing disease carries a high morbidity and mortality risk, making early diagnosis and management crucial.

Aim: This review aims to provide an updated overview of Cushing disease, focusing on its diagnosis, treatment options, and nursing interventions to manage the condition effectively.

Methods: An extensive literature review was conducted, including a detailed analysis of diagnostic criteria, medical treatments such as trans-sphenoidal surgery (TSS), radiation therapy, and medications like ketoconazole. Nursing interventions were highlighted, emphasizing the importance of monitoring vital signs, cardiovascular health, and the prevention of complications such as infections and electrolyte imbalances.

Results: The review found that the most effective method for diagnosing Cushing disease includes biochemical tests such as salivary cortisol, 24-hour urinary cortisol, and dexamethasone suppression tests. Pituitary MRI and inferior petrosal sinus sampling are crucial for confirming the diagnosis. Treatment options primarily focus on surgical resection of ACTH-secreting tumors, with radiation therapy and

bilateral adrenalectomy used in refractory cases. Nurses play a critical role in monitoring patient conditions, managing complications, and providing patient education on managing their disease.

Conclusion: Cushing disease, although rare, requires timely diagnosis and a multidisciplinary approach to treatment. Early intervention through surgery or radiation therapy significantly improves outcomes. Nursing management is essential for the ongoing care and education of patients to ensure optimal recovery and reduce the risk of recurrence. Nurses must remain vigilant in monitoring for complications and educating patients on managing their condition effectively.

Keywords: Cushing disease, ACTH, pituitary adenoma, cortisol, diagnosis, treatment, nursing interventions, surgery, radiation therapy, patient education.

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Introduction:

Cushing disease is an uncommon endocrine disorder that is primarily marked by the overproduction of adrenocorticotropic hormone (ACTH) from the anterior pituitary, resulting in an excessive release of cortisol from the adrenal glands [1]. This condition is predominantly caused by a pituitary adenoma or, less frequently, by increased secretion of corticotropin-releasing hormone (CRH) from the hypothalamus. The clinical manifestations are multifaceted, including systemic weakness, elevated blood pressure, hyperglycemia, menstrual irregularities, and psychiatric disturbances such as mood swings or depression [1]. On a physical level, patients may exhibit characteristic features of cortisol excess, which include a rounded, "moon" face, a "buffalo hump" at the base of the neck, easy bruising, abdominal striae, central obesity, facial redness (plethora), and hirsutism [2]. These physical signs are indicative of the prolonged effects of cortisol on various body systems and are crucial for clinical diagnosis. The disease is relatively rare, with an estimated incidence of approximately 2.4 new cases per million individuals annually. Diagnosing Cushing disease can often be delayed by several years, with the average time to diagnosis ranging from 3 to 6 years after the onset of symptoms. The disease commonly affects women, particularly those between the ages of 50 and 60 years, with the highest incidence observed in this demographic. In untreated patients, the presence of comorbidities such as hypertension and glucose metabolism disturbances are significant predictors of both morbidity and mortality. The mortality rate for Cushing disease is estimated to be around 10% to 11%, emphasizing the severity and risks associated with the disease if left untreated [2].

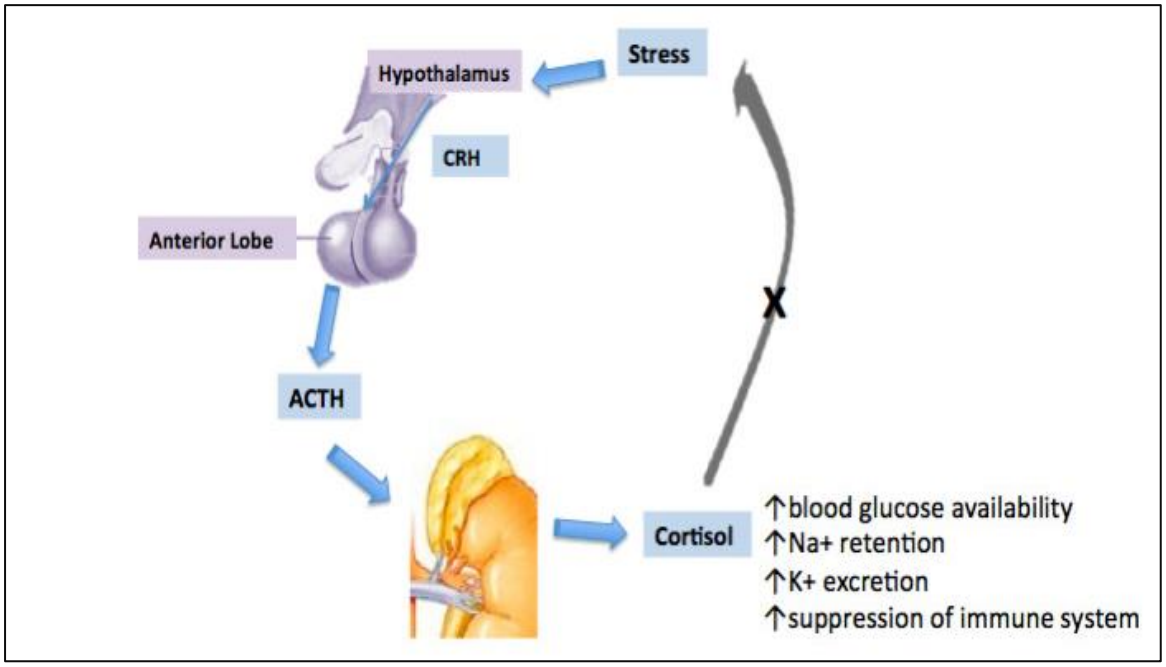

Figure 1: Hypothalamic-Pituitary-Adrenal Axis (HPA axis).

Nursing Diagnosis

In the context of Cushing disease, several nursing diagnoses are relevant due to the complex physiological and psychological impact of the condition. One key diagnosis is inadequate healing, as excess cortisol impairs tissue repair processes and suppresses immune function, leading to delayed wound healing. Additionally, inadequate body fluid balance is often a concern due to the fluid retention associated with increased cortisol, which can result in edema and electrolyte imbalances. Another critical diagnosis is risk for infection, given that cortisol inhibits the immune system, increasing vulnerability to infections. Patients with Cushing disease may also experience deficient knowledge, particularly regarding the nature of their condition, treatment options, and the impact of lifestyle modifications on their health. Impairment in hormonal control is another important nursing diagnosis, as the overproduction of cortisol disrupts the balance of other hormones, which can lead to various metabolic disturbances and a diminished quality of life. Additionally, disturbed body image often arises due to the characteristic physical changes associated with the disease, such as weight gain, facial puffiness, and hirsutism. Finally, altered thought and behavior can manifest as psychiatric symptoms, including depression, anxiety, and cognitive changes, requiring psychological support and intervention to address these concerns effectively.

Causes

Pituitary adenomas account for nearly 80% of the cases of Cushing disease [2]. It is important to distinguish Cushing disease from Cushing syndrome, as the latter is a broader term describing the condition of hypercortisolemia, which can arise from various causes such as the exogenous use of steroids, adrenal tumors, ectopic ACTH production, or elevated estrogen levels. However, Cushing disease specifically refers to the endogenous overproduction of ACTH, which in turn leads to secondary hypercortisolism. The historical context of Cushing disease dates back to 1912 when Harvey Cushing, a prominent American neurosurgeon, first described the condition after encountering a unique case in 1910. Based on his observations, Cushing hypothesized that the excessive secretion of basophilic cells in the pituitary gland was the underlying cause of symptoms such as obesity, amenorrhea, abnormal hair growth, underdeveloped sexual characteristics, hydrocephalus, and cerebral tension. His pioneering work provided the foundation for the understanding of this disorder and remains significant in the field of endocrinology to this day [2].

Risk Factors

Cushing disease is considered the second most prevalent cause of Cushing syndrome, with exogenous steroid use being the most common etiology. The incidence of new cases of Cushing disease is approximately 2.4 cases per million individuals annually. Diagnosis of this disease is typically delayed, with the condition being recognized 3 to 6 years after the onset of symptoms. Cushing disease predominantly affects women, with the peak incidence occurring in individuals between the ages of 50 and 60 years. One of the key determinants of morbidity and mortality in patients with untreated Cushing disease is the presence of comorbid conditions, particularly hypertension and abnormalities in glucose metabolism. These factors are critical in predicting the overall prognosis of the disease. The estimated mortality rate for individuals with Cushing disease ranges from 10% to 11%, highlighting the severity of the disease if not diagnosed and treated promptly [2].

Assessment

Patients with hypercortisolism typically exhibit a range of clinical symptoms, with weight gain being observed in about 50% of cases. Other common signs include hypertension, easy bruising, striae, acne, facial flushing, poor wound healing, lower limb edema, fatigue, impaired glucose tolerance, osteoporosis, hyperpigmentation of the skin, mood and memory changes, amenorrhea, hirsutism, decreased sexual drive, and a higher susceptibility to frequent infections. The clinical presentation of Cushing disease varies significantly between patients, which makes the diagnosis challenging. A high index of clinical suspicion is therefore essential for an accurate diagnosis, particularly in cases where the symptoms may overlap with other conditions [3]. In some cases, large pituitary tumors (macroadenomas) may also exert mass effects

on surrounding structures, although this is relatively rare. Such tumors can cause visual disturbances, such as a loss of peripheral vision, or trigger headaches. These additional neurological symptoms should be considered when evaluating patients for Cushing disease, as they may provide valuable diagnostic clues [3].

Evaluation

Upon initial presentation, more than 50% of individuals diagnosed with Cushing disease exhibit microadenomas, characterized by a diameter of less than 5 mm [4]. Of these, only 10% are sufficiently large to exert a mass effect on surrounding cerebral tissue, thereby influencing the structure of the sellar region [4]. Consequently, the majority of ACTH-secreting pituitary adenomas are typically identified after clinical suspicion arises regarding excessive cortisol and androgen production [5].

To confirm hypercortisolism, biochemical diagnostic tests play a crucial role. These include salivary and blood serum cortisol testing, 24-hour urinary-free cortisol testing, and low-dose overnight dexamethasone suppression testing [6]. Recently, the late-night or midnight salivary cortisol test has garnered support due to its simplicity of administration. This test, which measures free-circulating cortisol, has been shown to possess a sensitivity and specificity range of 95% to 98% [7]. The urinary-free cortisol test quantifies the excess cortisol excreted into the urine, with levels four times higher than the normal cortisol level indicative of Cushing syndrome. To eliminate any possibility of transient hypercortisolism, this test should be repeated three times [6]. Although the specificity of this test is 81%, false positives can occur in conditions such as pseudo-Cushingoid states, sleep apnea, polycystic ovary syndrome, familial glucocorticoid resistance, and hyperthyroidism. In low-dose dexamethasone suppression testing, a 0.5 mg dose of dexamethasone is administered orally at six-hour intervals for 48 hours, and serum cortisol levels are measured six hours after the final dose. A cortisol level below 50 nmol/L is considered normal, effectively excluding Cushing syndrome. This test has a sensitivity of 100% and a specificity of 88%, with a positive predictive value of 92% and a negative predictive value of 89% [8].

Biochemical confirmation of Cushing syndrome is achieved when two or more initial screening tests yield positive results, especially in patients with a high pretest probability [6][9]. Upon confirming Cushing syndrome, the subsequent step involves measuring the baseline plasma ACTH level. A consistent level above 3.3 pmol/L indicates a corticotropin-dependent etiology [8]. To distinguish Cushing disease from ectopic corticotropin syndrome, a corticotropin-releasing hormone (CRH) test is utilized. In Cushing disease, CRH administration stimulates additional corticotropin release, leading to elevated plasma corticotropin levels. The CRH test shows a sensitivity of 93% when plasma levels are measured at 15 and 30 minutes post-administration [8]. Alternatively, a high-dose 48-hour dexamethasone suppression test or pituitary magnetic resonance imaging (MRI) can also be employed [8].

The high-dose 48-hour dexamethasone suppression test involves administering either 2 mg of dexamethasone every six hours for 48 hours or a single 8 mg dose. A plasma cortisol level greater than 50 nmol/L after 48 hours suggests Cushing disease, though the test carries an 8% false-negative rate [2]. Pituitary MRI may identify an ACTH-secreting tumor, but it is unable to detect tumors in 40% of Cushing disease patients, with detected tumors averaging around 6 mm in size [4]. The most reliable test to differentiate a pituitary adenoma from ectopic or adrenal Cushing syndrome is inferior petrosal sinus sampling. This invasive procedure measures the ACTH levels in the inferior petrosal sinus (where the pituitary gland drains) and compares them to peripheral ACTH levels [6][10]. A central-to-peripheral ratio of more than 3:1, after CRH administration, confirms Cushing disease. This test, which is considered the gold standard for diagnosing Cushing disease, boasts a sensitivity and specificity nearing 94%, but its use is limited in clinical practice due to its high cost, invasiveness, potential for severe complications, and the need for specialized expertise [10].

Medical Management

In cases where a primary ACTH-secreting tumor is identified, the primary approach to treatment is the surgical resection of the adenoma, typically performed through trans-sphenoidal surgery (TSS) [8]. This procedure can be conducted via either an endonasal or sublabial method, depending on the surgeon's

preference [11]. The success rate of tumor resection is notably higher when the tumor is localized and identifiable during the initial surgery [11]. Remission rates following TSS generally range from 65% to 90% for microadenomas but drop to below 65% for macroadenomas [8]. For patients who experience persistent disease following the initial surgery, repeat pituitary surgery may be considered, although the success rate of this second intervention is lower, and the risks of developing pituitary insufficiency increase [11]. Common complications associated with TSS include diabetes insipidus (15%), fluid and electrolyte imbalances (12.5%), and neurological deficits (5.6%) [11]. Additionally, patients over the age of 64 are at a higher risk for experiencing adverse outcomes following the procedure [12].

If TSS proves unsuccessful, pituitary radiation therapy can be employed as a secondary treatment option [8][13]. External-beam pituitary radiotherapy has shown particular effectiveness in pediatric patients, with cure rates ranging from 80% to 88% [14]. However, hypopituitarism, which can lead to growth hormone deficiency, is a significant complication, affecting 36% to 68% of patients [14]. In certain cases, bilateral adrenalectomy may be performed to rapidly decrease cortisol levels in patients with Cushing disease [2]. However, lifelong glucocorticoid and mineralocorticoid replacement therapy is required following this procedure. A significant complication of bilateral adrenalectomy is the development of Nelson syndrome, characterized by the formation of ACTH-secreting macroadenomas, which occurs in 8% to 29% of patients, typically diagnosed an average of 15 years after the procedure [2]. Post-treatment monitoring involves the use of 24-hour urine and blood samples to measure cortisol levels [8]. A lack of response to the desmopressin test following surgery may suggest complete tumor removal and a lower likelihood of recurrence [15]. Despite successful initial treatment, approximately one-third of patients experience recurrence of hypercortisolemia [14][16]. As a result, lifelong monitoring remains essential, with late-night salivary cortisol serving as the most reliable predictor of recurrence [17][18].

Nursing Management

In the management of patients with Cushing disease, nurses play a crucial role in the continuous assessment of vital signs and overall health status. It is essential to regularly monitor the patient's cardiovascular health by assessing heart and lung function, as hypertension and fluid overload are common manifestations of the disease. This includes closely monitoring blood pressure and listening for signs of respiratory distress or abnormal lung sounds, which could indicate fluid retention. Additionally, a 12-lead electrocardiogram (ECG) should be performed to assess the patient’s cardiac function, as abnormalities can often accompany the disease due to prolonged hypertension or electrolyte imbalances. The assessment of neurovitals is also critical, as the underlying cause of Cushing disease often involves a pituitary tumor, which can directly impact brain function. Monitoring for neurological symptoms, such as changes in consciousness, memory, or motor function, should be done routinely, with immediate attention to any signs of increased intracranial pressure. Regular checks of electrolytes are necessary, particularly for imbalances that are common in Cushing disease, such as low potassium levels (hypokalemia) and elevated sodium levels (hypernatremia). These electrolyte disturbances can significantly affect a patient's overall health and need prompt correction.

Weight assessment is another key element of patient care. Due to the typical features of Cushing disease, including fluid retention and an increase in adipose tissue, the patient may experience significant weight gain. Daily weighing of the patient should be done to track any fluctuations in weight, which may indicate changes in fluid balance or further progression of the disease. In parallel, it is important to monitor input and output (I&O), as fluid retention is a common issue in Cushing disease, potentially leading to edema or ascites. Monitoring I&O allows for the early detection of fluid overload, which can require medical intervention, including the use of diuretics. Blood glucose levels should be monitored closely, as hyperglycemia is often present in patients with Cushing disease. Elevated glucose levels can exacerbate the patient's condition and may require insulin therapy or other interventions to maintain glycemic control. Nurses should administer antihypertensive medications as ordered to manage the hypertension associated with the disease, ensuring that blood pressure is kept within a safe range to prevent further cardiovascular complications.

Diuretics are often prescribed to manage the fluid retention that is a hallmark of Cushing disease. It is essential for nurses to administer these medications as prescribed, carefully monitoring for side effects such as dehydration, electrolyte disturbances, and hypotension. If the patient is scheduled for surgery, they must be kept NPO (nothing by mouth) as a precautionary measure to reduce the risk of aspiration and other complications during anesthesia. Patient education is another critical responsibility of nursing care in Cushing disease. Nurses should provide clear explanations about the nature of the disease, treatment options, and potential outcomes. This educational process helps patients understand the importance of adhering to their treatment regimen and managing the psychological and physical challenges associated with the disease. Nurses should also stress the importance of hand hygiene to reduce the risk of infection, a common concern in immunocompromised patients or those on long-term steroid therapy. Finally, encouraging follow-up care with a healthcare provider is vital for ongoing management. As Cushing disease often requires lifelong monitoring for recurrence or complications, nurses should reinforce the need for regular check-ups, lab tests, and other diagnostic procedures to ensure that the patient's condition is appropriately managed.

Outcome Identification

Without appropriate treatment, Cushing disease is ultimately fatal, primarily due to the excess production of glucocorticoids, which contributes to various severe medical complications. These complications often include significant impairment of immune function, which leaves patients vulnerable to infections and other health issues. In patients who undergo surgical intervention, lifelong glucocorticoid replacement therapy is necessary to compensate for the loss of endogenous cortisol production following the removal of the tumor or other therapeutic procedures. This long-term treatment is essential for maintaining homeostasis and preventing the adverse effects of cortisol deficiency. However, even with treatment, the patient must continue to be monitored regularly to manage the risk of recurrence and associated complications.

Coordination of Care

Cushing disease is a rare and complex disorder of the pituitary gland, requiring a comprehensive, multidisciplinary approach to management. The care of patients with this condition involves collaboration among a team of specialists, including a neurosurgeon, radiation consultant, endocrinologist, radiologist, primary care provider, nurse practitioner, and internist. These healthcare providers must work together closely, as Cushing disease is associated with a range of potential complications, such as peptic ulcer disease, significant weight gain, osteoporosis, diabetes, immune system dysfunction, and hypertension. Due to these risks, patients must be monitored closely to manage these comorbidities and prevent further health deterioration. For large pituitary lesions, surgical resection is typically indicated, while smaller lesions may be treated with medications. Regardless of the treatment approach, patients with Cushing disease require lifelong follow-up care, including regular assessments of cortisol levels. The recurrence of the disease is not uncommon, and either excessive or insufficient cortisol levels can result in life-threatening consequences. Therefore, the pharmacist plays a crucial role in emphasizing the importance of medication adherence to the patient. Additionally, patients should be encouraged to wear a Medical Alert bracelet to inform healthcare providers of their condition in case of emergencies. Effective communication among clinicians is essential to prevent complications, ensure proper treatment, and improve patient outcomes. Although many patients undergo treatment, the overall prognosis remains somewhat guarded, with ongoing monitoring and medical intervention required throughout their lives [19][20].

Risk Management

In recent years, medical therapy has gained increasing attention as a treatment modality for pituitary tumors, offering an alternative to the traditional first-line surgical approach. Although surgery remains the primary treatment for these tumors, pharmacological interventions have demonstrated efficacy in managing the hormonal imbalances associated with the condition [21]. These therapies are designed to target various mechanisms involved in the pathophysiology of pituitary tumors. Some drugs aim to inhibit the secretion of adrenocorticotropic hormone (ACTH) centrally, while others focus on adrenal inhibition of

steroidogenesis or block the glucocorticoid receptor. Centrally acting agents such as pasireotide and cabergoline are used to reduce ACTH secretion, which plays a key role in the overproduction of cortisol. Inhibitors of adrenal steroidogenesis, including ketoconazole, metyrapone, etomidate, mitotane, and osilodrostat, work by decreasing cortisol production at the adrenal level. Additionally, mifepristone, a glucocorticoid-receptor blocker, is employed to interfere with cortisol's action on its receptor, thereby alleviating the symptoms of hypercortisolism. Despite the regulatory approval of several pharmacological treatments, their clinical application is often restricted due to the high costs and potential side effects, which limit their widespread use in clinical practice [5].

Other Issues

Medical therapy has become a viable option for managing pituitary tumors in recent times. While surgery remains the cornerstone of treatment, pharmacological interventions can effectively address the hormonal dysregulation associated with the condition [21]. These therapies are designed to specifically target key aspects of ACTH production and cortisol synthesis, with drugs such as pasireotide and cabergoline working centrally to reduce ACTH secretion [22]. Various adrenal steroidogenesis inhibitors, including ketoconazole, metyrapone, etomidate, mitotane, and osilodrostat, are utilized to directly suppress cortisol production at the adrenal level. Additionally, mifepristone serves as a glucocorticoid-receptor blocker, mitigating the effects of excess cortisol. Despite these treatments being approved by regulatory agencies, their adoption is still limited by factors such as prohibitive costs and the potential for adverse side effects [5].

Nursing Care Plan for Long-Term:

The long-term management of patients with conditions such as Cushing's disease requires a comprehensive nursing care plan that integrates medical, emotional, and educational support. Nursing care for these patients should be individualized, based on their unique needs, and focused on the promotion of health, prevention of complications, and enhancement of the quality of life. Effective nursing interventions should be rooted in careful assessment, proactive monitoring, and collaboration with the multidisciplinary team.

One of the primary nursing concerns for patients with Cushing's disease is managing the physiological effects of prolonged exposure to excess cortisol. Nurses must continuously assess and monitor vital signs, particularly blood pressure and heart rate, as these patients are at heightened risk for hypertension and cardiovascular complications due to the hypercortisolemia [8]. Regular monitoring of fluid balance is essential, as fluid retention is a common manifestation, leading to edema and weight gain. Nurses should document fluid intake and output, ensuring that patients do not develop complications such as hypervolemia or electrolyte imbalances. Due to the commonality of low potassium and high sodium levels in Cushing's disease, laboratory tests should be frequently ordered to assess electrolyte balance, and corrective actions should be promptly implemented when necessary. Additionally, patients may experience a range of complications due to the chronic nature of Cushing's disease. Osteoporosis is a significant concern, given the long-term effects of elevated cortisol levels on bone density. Nurses should monitor for signs of fractures and encourage weight-bearing exercises as appropriate to maintain bone health. Moreover, patients are often at an increased risk for developing infections due to the immunosuppressive effects of elevated cortisol. Therefore, infection prevention measures should be strictly followed, including promoting proper hand hygiene, providing patient education on wound care, and ensuring that patients receive appropriate vaccinations to reduce the risk of infections. Nurses should also regularly inspect the skin for signs of pressure ulcers or other skin breakdowns, as these patients may have thinning skin and reduced tissue resilience.

Managing blood glucose levels is another crucial aspect of long-term nursing care. Elevated cortisol levels can result in hyperglycemia, leading to insulin resistance and an increased risk for diabetes. Nurses should regularly monitor blood glucose levels and collaborate with the healthcare team to adjust medications and manage diet as necessary. Patient education on the importance of glucose control, including understanding dietary restrictions and adhering to prescribed medications, is essential to prevent the onset of further metabolic complications such as diabetes mellitus. Mental health support is also a critical component of the

nursing care plan for long-term management. Chronic conditions such as Cushing's disease can significantly impact patients' mental health, leading to symptoms of depression, anxiety, and emotional instability. Nurses should perform regular assessments of the patient's emotional well-being, provide psychological support, and offer referrals to mental health professionals when appropriate. Nurses can help patients cope with the psychological burden of the disease by actively listening to their concerns, offering reassurance, and encouraging participation in social and support groups.

Nurses must also be vigilant in preparing patients for possible surgeries, such as trans-sphenoidal surgery (TSS) or adrenalectomy, which may be necessary to manage the underlying causes of Cushing's disease. Preoperative education is essential, ensuring that patients are informed about the surgical process, the expected recovery timeline, and potential risks. It is also important to address patients' emotional and psychological needs before surgery, offering support to reduce preoperative anxiety. Postoperatively, the nursing team should focus on monitoring for complications such as infection, fluid imbalance, and neurological deficits. Post-surgical care also includes pain management, wound care, and regular assessments of endocrine function to ensure proper recovery and management of hormonal imbalances. Nurses should advocate for continuous follow-up care, as the long-term management of Cushing's disease involves lifelong monitoring and treatment. Regular follow-up visits with endocrinologists, neurosurgeons, and other specialists are critical to assess for potential recurrence of the disease. Nurses should assist in coordinating these visits and ensure that patients understand the importance of adhering to their follow-up appointments. During these visits, further tests such as cortisol levels, MRI scans, and glucose tolerance tests may be required to evaluate treatment efficacy and detect any recurrence or complications.

Patient education is paramount in the long-term management of Cushing's disease. Nurses play a key role in teaching patients about their condition, including the potential risks and complications associated with both the disease and its treatments. Patients should be educated on how to recognize early signs of complications, such as infections or changes in mental status, and when to seek medical attention. Furthermore, nurses should emphasize the importance of lifestyle modifications, such as a balanced diet, exercise, and stress management techniques, in managing the effects of the disease and improving overall well-being. Encouraging patients to keep a medical alert bracelet to inform healthcare providers about their condition is another valuable intervention that can help reduce the risk of adverse outcomes during emergency situations. In conclusion, the long-term management of patients with Cushing's disease requires a holistic and multidisciplinary approach. Nursing interventions should focus on the physical, emotional, and psychological well-being of patients, with an emphasis on early detection of complications, education, and continuous monitoring. By providing individualized care, offering support, and collaborating with the healthcare team, nurses can play a pivotal role in improving patient outcomes and enhancing quality of life for those affected by Cushing's disease.

Conclusion:

Cushing disease, although rare, is a serious endocrine disorder that can significantly impact the patient's quality of life and overall health. This updated review provides an in-depth understanding of the disorder, from its pathophysiology to diagnostic challenges, treatment modalities, and the essential role of nursing care in managing patients with this condition. The diagnosis of Cushing disease is often delayed due to the overlapping nature of its symptoms with other conditions. Key diagnostic tests, such as salivary cortisol, 24-hour urinary cortisol, and low-dose dexamethasone suppression, are instrumental in confirming hypercortisolism. Once Cushing syndrome is diagnosed, confirming it as Cushing disease through tests like CRH stimulation and MRI is essential for distinguishing it from other causes of hypercortisolemia. Despite the availability of advanced diagnostic tools, the complexity of the disease makes early recognition critical to reducing morbidity and mortality. Surgical resection, primarily through trans-sphenoidal surgery, remains the cornerstone of treatment for most patients. However, the success rate depends on the size of the pituitary adenoma, with higher success rates seen in microadenomas. For patients with persistent or recurrent disease, additional treatments such as radiation therapy or bilateral adrenalectomy may be necessary. While these treatments can be effective, they come with significant risks, including the development of hypopituitarism or Nelson syndrome. Hence, lifelong monitoring of cortisol levels and

regular follow-up are vital components of long-term management. Nurses play an integral role in the management of Cushing disease. Their responsibilities extend beyond routine assessments to include the monitoring of vital signs, electrolytes, and neurological function. Nurses also support patients by educating them about the disease, its treatments, and the importance of adherence to medical advice to prevent complications. Effective nursing care not only aids in the recovery process but also ensures that patients are well-informed about their condition, which is crucial for managing the disease long-term. Overall, while Cushing disease is a challenging condition to diagnose and treat, the combination of accurate diagnostic tools, effective surgical and medical interventions, and dedicated nursing care offers patients the best possible outcomes. Timely diagnosis, appropriate treatment, and continuous monitoring are essential in reducing the long-term effects of the disease and improving the patient's quality of life.

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مرض كوشينغ: التشخيص والعلاج والإدارة والتدخلات التمريضية - مراجعة محدثة

الملخص :

الخلفية :مرض كوشينغ هو اضطراب نادر في الغدد الصماء يتميز بالإفراز المفرط لهرمون الأدرينوكورتيكوتروبين(ACTH) ، والذي يُسبب عادةً من ورم في الغدة النخامية. يؤدي هذا المرض إلى إفراز مفرط للكورتيزول من الغدد الكظرية، مما ينتج عنه مجموعة من الأعراض السريرية مثل زيادة الوزن، وارتفاع ضغط الدم، وعدم تحمل الجلوكوز، والاضطرابات النفسية. يُلاحظ المرض في الغالب لدى النساء اللواتي تتراوح أعمارهن بين 50 و60 عامًا، ويمكن أن يبقى غير مُشخّص لعدة سنوات. وإذا ترك دون علاج، فإن مرض كوشينغ يحمل خطرًا عالياً من الممراضة والوفيات، مما يجعل التشخيص المبكر والإدارة الفعّالة أمرًا بالغ الأهمية.

الهدف :تهدف هذه المراجعة إلى تقديم لمحة محدثة عن مرض كوشينغ، مع التركيز على تشخيصه، خيارات العلاج، والتدخلات التمريضية لإدارة الحالة بشكل فعال.

المنهجية :تم إجراء مراجعة شاملة للأدبيات، بما في ذلك تحليل دقيق للمعايير التشخيصية والعلاجات الطبية مثل الجراحة عبر الأنف(TSS) ، والعلاج الإشعاعي، والأدوية مثل الكيتوكونازول. تم تسليط الضوء على التدخلات التمريضية، مع التركيز على أهمية مراقبة العلامات الحيوية، وصحة القلب والأوعية الدموية، والوقاية من المضاعفات مثل العدوى واضطرابات التوازن الكهربي.

النتائج :أظهرت المراجعة أن الطريقة الأكثر فعالية لتشخيص مرض كوشينغ تشمل الفحوصات البيوكيميائية مثل الكورتيزول في اللعاب، وكورتيزول البول لمدة 24 ساعة، واختبارات تثبيط الديكساميثازون. تُعد الرنين المغناطيسي للغدة النخامية وأخذ عينات من الوريد الصدغي السفلي أمرًا حاسمًا لتأكيد التشخيص. تركز خيارات العلاج بشكل رئيسي على الاستئصال الجراحي للأورام المفرزة لACTH ، مع استخدام العلاج الإشعاعي واستئصال الغدة الكظرية الثنائية في الحالات المقاومة للعلاج. يلعب الممرضون دورًا حيويًا في مراقبة حالة المرضى، وإدارة المضاعفات، وتوفير التعليم للمرضى حول كيفية إدارة مرضهم.

الخلاصة :على الرغم من أن مرض كوشينغ نادر، فإنه يتطلب تشخيصًا في الوقت المناسب ونهجًا متعدد التخصصات للعلاج. يؤدي التدخل المبكر من خلال الجراحة أو العلاج الإشعاعي إلى تحسين كبير في النتائج. يُعدّ إدارة التمريض أمرًا أساسيًا للرعاية المستمرة والتعليم للمرضى لضمان التعافي الأمثل وتقليل خطر الانتكاس. يجب على الممرضين أن يظلوا يقظين في مراقبة المضاعفات وتثقيف المرضى حول كيفية إدارة حالتهم بشكل فعال.

الكلمات المفتاحية :مرض كوشينغ، ACTH، الورم النخامي، الكورتيزول، التشخيص، العلاج، التدخلات التمريضية، الجراحة، العلاج الإشعاعي، تعليم المرضى.