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Polycystic Ovary Syndrome (PCOS)

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Introduction
Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in females of reproductive age (McElwin & Hartmann, 2018). It is a complex disease and encompasses many different metabolic, endocrine and reproductive conditions. Though the exact cause of PCOS is not fully understood, recent studies have shown PCOS may be hereditary and up to fifty percent of first degree female relatives can be affected (Balen, 2017). Early detection and diagnosis of PCOS along with weight loss can help reduce the risks of long term complications such as diabetes and heart disease (Anagnostis, Tarlatzis & Kauffman, 2018).

Case Study
Jane is 18 years old and recently went to her gynecologist for her annual exam. She complained of infrequent and polycystic ovulation, acne, obesity, irregular menses and polycystic ovary tumors. For this reason, polycystic ovaries do not have to be present in order to make a PCOS diagnosis.

Diagnosis of PCOS
To be diagnosed with PCOS, two of the following conditions must be present:

- Elevated levels of androgens
- Clinical signs of hyperandrogenism
- Polycystic ovaries

There is no set standard for diagnostic criteria making a PCOS diagnosis complicated.

Pathophysiology
While the true cause of PCOS is not fully understood, many describe the condition as a metabolic disorder, with primary defects located in the hypothalamic-pituitary axis and overall ovarian function.

The hypothalamus and anterior pituitary axis control maturation of the ovary. They are responsible for releasing follicle-stimulating hormone (FSH) and luteinizing hormone (LH) which initiate ovulation. In PCOS, ovulation is not triggered due to follicles of immature eggs within the ovary that never matured. The lack of ovulation creates low levels of estrogen, progesterone, and LH as well as high levels of androgens (Hanson et al., 2017). Hyperandrogenism and hyperinsulinemia play a role in cytogenesis. The binding of insulin to a cell by an increase in serum and a decrease in tyrosine phosphorylation (Kuroe & Vijaykumar, 2015). This affects the metabolic pathways within the ovaries causing increased resistance to insulin. This increase in insulin causes the ovary to excessively secrete androgens. Hyperandrogenism causes egg follicles to go into an arrested state known as atresia which inhibits egg maturation and the ability to ovulate (Rotstein, 2018).

PCOS is thought to be an autodestructive dominat condition. Studies have shown there may be a genetic link between first degree female relatives and up to fifty percent can be affected (Balen, 2017).

Significance of Pathophysiology
Women with PCOS are at an increased risk for obesity, high blood pressure, high blood sugar, and high levels of LDL. These complications, put women at an increased risk for developing diabetes, heart disease and strokes later in life (Rotstein, 2018).

The prevalence of infertility in women with PCOS varies between seventy and eighty percent. Obese women with PCOS may accompany disorders of glucose homeostasis. For example, patients experiencing irregular menses, and who are not insulin resistant may be prescribed oral contraceptives. Oral contraceptives help to increase sex hormone binding globulin levels and decrease androgen secretion (Otto-Buczkowska, Gryg & Janita, 2018).

Due to hormonal imbalance, nulliparity, infertility and endometrial hyperplasia, the risk for PCOS women to develop endometrial cancer is very high. A hysterectomy is the suggested safest way to prevent progression of the cancer (Balen, 2017).

Implications of Nursing Care
With PCOS affecting many different aspects of the body, it is vital that an in depth past medical history be obtained. This ensures that proper tests can be ordered as well as ruling out other conditions that can cause polycystic ovaries (Anagnostis, Tarlatzis & Kauffman, 2018).

For many patients with PCOS, goals of treatment include symptom management. For example, patients experiencing irregular menses, and who are not insulin resistant may be prescribed oral contraceptives. Oral contraceptives help to increase sex hormone binding globulin levels and decrease androgen secretion (Otto-Buczkowska, Gryg & Janita, 2018).

Diet and exercise should be encouraged. Studies have found that a decrease in adipomor fat may help reverse menses as well as decrease insulin resistance in some patients. Metformin may be prescribed to help maintain blood glucose and help to restore the bodies proper response to insulin. Patients should be regularly screened for depression and anxiety. Low self esteem is commonly seen among PCOS due to physical aspects of the disease such as a weight gain, acne and hirsutism secretion (Otto-Buczkowska, Gryg & Janita, 2018).

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Implications of Nursing Care
With PCOS quickly becoming the most prevalent endocrine disorder affecting women during their reproductive period. It is of great importance that nurse practitioners become familiar with the disorder and the multiple comorbidities that may arise. With so many differing clinical symptoms and no true cause, nurses and their patients have much to learn about PCOS. It is important that nurse practitioners continue to further their understanding of PCOS and be their patients advocate when it comes to seeking answers.

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Conclusion
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