



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1012174>Available online at: <http://www.iajps.com>

Research Article

**CROSS-SECTIONAL ANALYSIS OF INCIDENCE OF UNDERLYING
HYPOTHYROIDISM IN PATIENTS PRESENTING WITH MENSTRUAL
DISTURBANCES****Nasreen Noor¹, Muhammad Iqbal^{2*}, Sohail Baig³, Hamid Nawaz Ali Memon⁴,
Syed Jahanghir⁵ & Maryam Iqbal⁶**¹Liaquat University Hospital, Hyderabad^{2, 3, 5}Liaquat University of Medical & Health Sciences, Jamshoro⁴Zulekha Hospital, Dubai⁶Isra University, Hyderabad**Abstract:**

Objective: This study hopes to investigate the underlying incidence of hypothyroidism among patients presenting with menstrual disturbances, including, but not limited to menorrhagia.

Methodology: The cross-sectional analysis was conducted mutually by the department of obstetrics & gynecology and the department medicine at Liaquat university hospital, Hyderabad, a tertiary care hospital, upon a total of 380 patients from June 2016 to January 2017. Written informed consent was acquired from the patient before using the obtained data as part of this research.

Results: Of the 380 patients suffering from menstrual disturbance and irregular periods, 60 patients suffered from oligomenorrhoea and 200 from menorrhagia i.e. the most common feature in the sample set. 66 of the patients had subclinical hypothyroidism, 33 had mild hypothyroidism and 112 had severe underlying hypothyroidism. Among the non-euthyroid individuals 29 had normal periods while the rest suffered from menstrual disturbances. (Oligomenorrhia: 19, Menorrhagia: 52 and others: 12).

Conclusion: After careful consideration and deliberation on the obtained results, it is clear that hypothyroidism in women is frequently associated with menstrual disturbances. Also, irregularities in menstruation are often more prevalent in severer cases of hypothyroidism as compared to when the condition (hypothyroidism) is mild or moderate mild cases. The most common irregularity of menstruation was found to be menorrhagia.

Keywords: *Menstrual irregularity, menstrual disturbance, Hypothyroidism, Euthyroidism, Menorrhagia and Oligomenorrhia,*

Corresponding Author:**Dr. Muhammad Iqbal,**

*Affiliation: Associate Professor – Dept. of Medicine,
Liaquat University of Medical & Health Sciences, Jamshoro.*

Email: muhammadiqbalshah22@gmail.com

Phone number: 0300-3034963

QR code



Please cite this article in press as Muhammad Iqbal et al, Cross-Sectional Analysis of Incidence of Underlying Hypothyroidism in Patients Presenting with Menstrual Disturbances, Indo Am. J. P. Sci, 2017; 4(10).

INTRODUCTION:

Disorders and irregularities of menstruation are found commonly among women with hypothyroidism. Evidence based literature reports an increase in the flow of menstruation as the commonest manifestation of proven hypothyroidism. In addition to the increased flow, the condition (hypothyroidism) in severe cases, may cause continuous intermenstrual bleeding and consequently, severe loss of blood. [1-4]

In light of evidence based literature it has long been recognized that anomalies of the thyroid gland in women of child bearing age are linked to menstrual irregularities and abnormalities. Acclaimed published text on this subject suggests that amenorrhoea is prevalent among patients of thyrotoxicosis and menorrhagia is common-found in patients of hypothyroidism. This is probably owed to oestrogen breakthrough bleeding secondary to anovulation, a finding that is very frequent in severe cases of hypothyroidism. [5-8] Literature by Goldsmith *et al.* dating back to more than two decades states that eighty percent of individuals suffering from primary myxoedema had irregularities of menstruation. [9] More recent evidence based literature by Joshi *et al.*, originating from the Indian subcontinent, unearthed that 68 out of every 70 women suffering from hypothyroidism complained of irregularities of menstruation, compared to healthy controls where only 2 of the 14 had such complaints. [10]

Many theories, proven and otherwise have been put forth during the many years since this association was first noticed. Some acclaimed ones suggest that the increase in serum prolactin (PRL) levels is the main perpetrator leading to irregularities in menstruation [11-13] owing to the fact that the hypothalamic-releasing hormone (TRH) hastens the secretion of both thyroid-stimulating hormone (TSH) and prolactin releasing hormone (PRL). Galactorrhea too is often manifested due to this theoretical phenomenon.

Another proof that cements the association between hypothyroidism and menstrual irregularities is the fact that irregularities of menstruation such as menorrhagia, disappear after administration of

thyroxine. [14-16] Other common irregularities of menstruation that are alleviated after administration of thyroxine, in women of child bearing age, are oligo-menorrhoea and poly-menorrhoea. [17-21]

The underlying causes that give rise to the aforementioned irregularities and disturbances in menstruation are multiple. The defects in hemostasis such as lowered levels of factors VII, VIII and IX, being one of the causes of aforementioned irregularities of menstruation needs to be treated with importance. Safe pregnancies are not common-found in severer cases of this condition (hypothyroidism). The pregnancies that do manifest while suffering from hypothyroidism are abnormal, with still-births, abortions and premature cessations of gestation. [22-28]

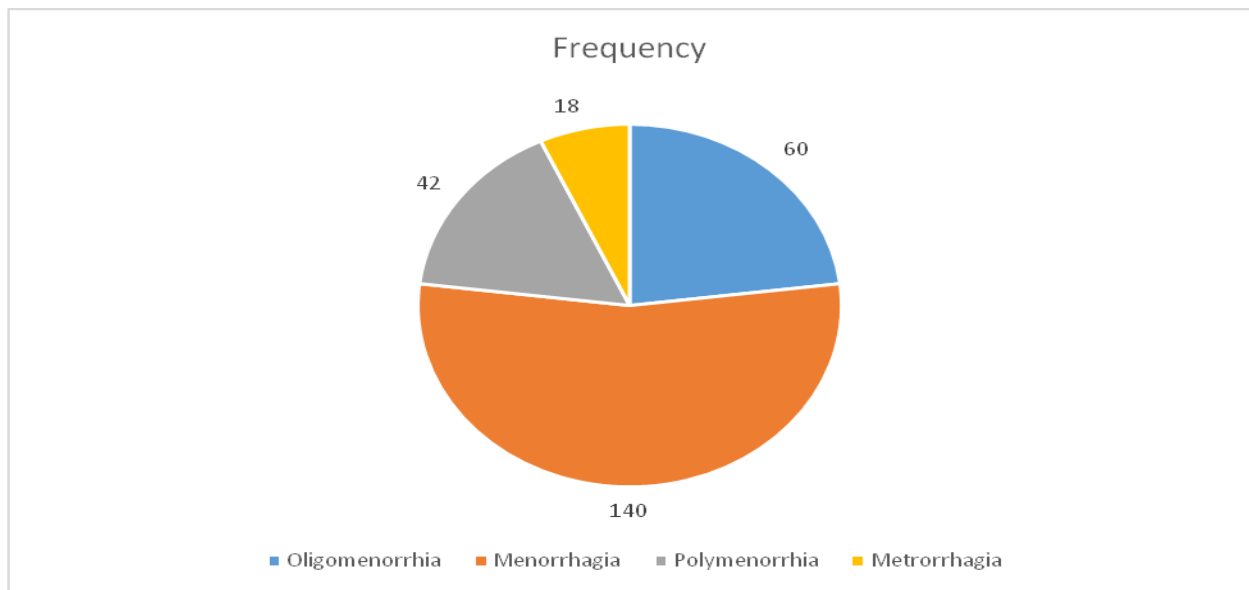
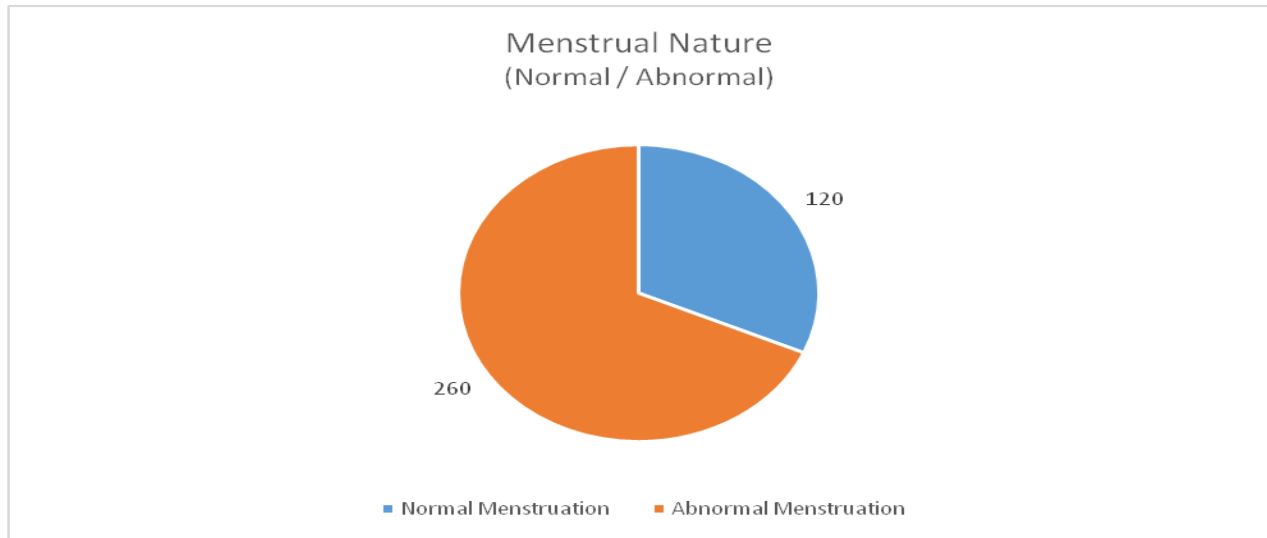
This study hopes to investigate the underlying incidence of hypothyroidism among patients presenting with menstrual disturbances, including, but not limited to menorrhagia in our part of the world, in an attempt to further emphasize the importance of prioritizing treatment of hypothyroidism.

METHODOLOGY:

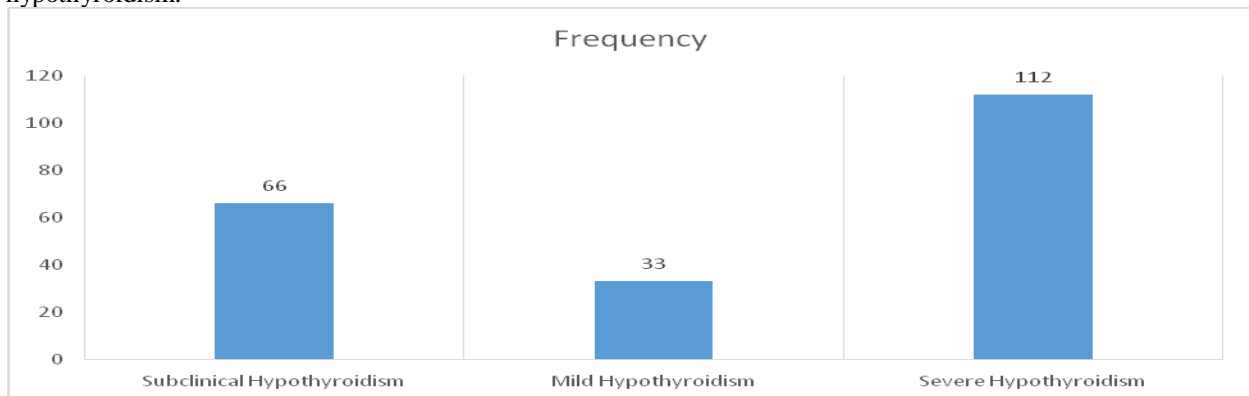
The cross-sectional analysis was conducted mutually by the department of obstetrics & gynecology and the department medicine at Liaquat university hospital, Hyderabad, a tertiary care hospital, upon a total of 380 patients from June 2016 to January 2017. Written informed consent was acquired from the patient before using the obtained data as part of this research. Patients presenting at the OBGYN out-patient department with menstrual irregularities were assessed for signs of hypothyroidism and all relevant patients were referred to the medical out-patient department (following administration of gynaecological care).

RESULTS:

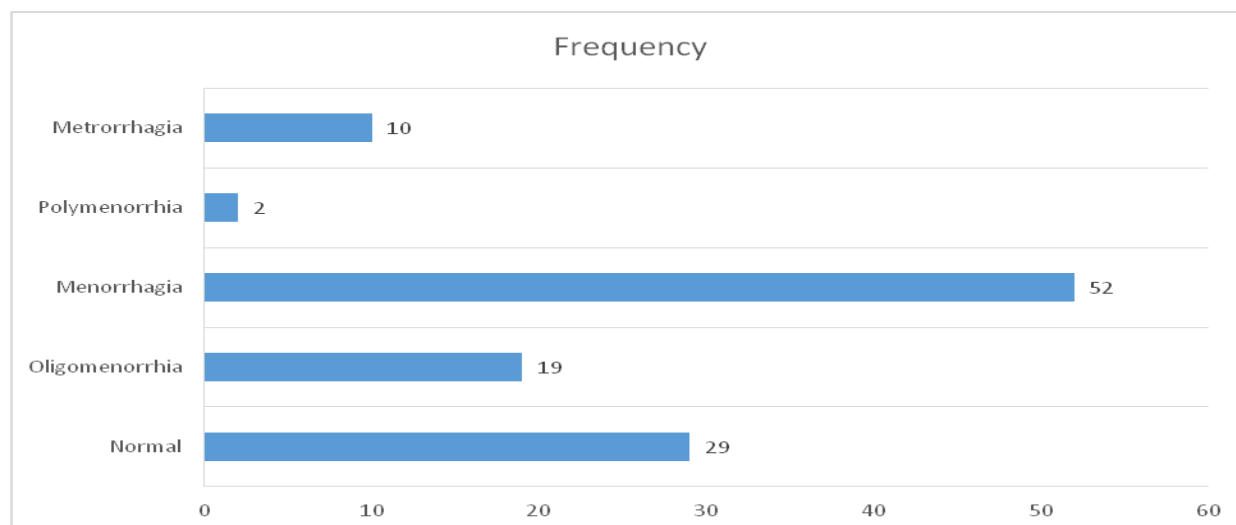
Of the 380 patients suffering from menstrual disturbance and irregular periods, 60 patients suffered from oligomenorrhoea and 140 from menorrhagia i.e. the most common feature in the sample set and 60 with other irregularities.



66 of the patients had subclinical hypothyroidism, 33 had mild hypothyroidism and 112 had severe underlying hypothyroidism.



Among the non-euthyroid individuals 29 had normal periods while the rest suffered from menstrual disturbances. (Oligomenorrhia: 19, Menorrhagia: 52 and others: 12).



DISCUSSION:

Women of child bearing age, when suffering from hypothyroidism, are often the victim of changes in amount of bleeding and length of menstrual cycle. One of the commonest irregularities of menstruation, i.e. menorrhagia, is reported to occur widely and often as much as in 56% of the cases. As suggested earlier, it is due to defects in haemostasis brought about by the lowered levels of factor VII, VIII, IX, and XI. The same mechanism is often the perpetrator behind other abnormalities, such as, oligo-menorrhoea and poly-menorrhoea.

As stated earlier, safe pregnancies are not common-found in severer cases of this condition (hypothyroidism). The pregnancies that do manifest while suffering from hypothyroidism are abnormal, with still-births, abortions and premature cessations of gestation. [22-28] This is attributed to the fact that ovulation and ovarian function are largely preserved in hypothyroidism. Thus pregnancy is achieved but is not maintained.

A solution for another of the hypothyroid associated gynecological issues, i.e. galactorrhea, is the administration of L-thyroxine which can normalize the menstrual pattern and flow, thus suppressing galactorrhea.

Research, however, is rather scarce in other matters pertaining to this association. Although, acclaimed evidence based literature on this subject suggests that amenorrhoea is prevalent among patients of thyrotoxicosis and menorrhagia is common-found in patients of hypothyroidism and despite some researchers suggesting it to be caused by oestrogen breakthrough bleeding secondary to anovulation, [5-8] no solid evidence exists to proven this beyond doubt. But, one fact does solidly support the association between hypothyroidism and menstrual

irregularities and it is the fact that irregularities of menstruation such as menorrhagia, oligo-menorrhoea and poly-menorrhoea disappear after administration of thyroxine. [14-16]

Our study observed that out of the 380 patients suffering from menstrual disturbance and irregular periods that reported at the study setting, 60 patients suffered from oligomenorrhoea and 200 from menorrhagia i.e. the most common feature in the sample set. 66 of the patients had subclinical hypothyroidism, 33 had mild hypothyroidism and 112 had severe underlying hypothyroidism. This is synonymous with published literature that claims severe cases of hypothyroidism, to have more prevalent and more pronounced intermenstrual bleeding. [1-4]

CONCLUSION:

After careful consideration and deliberation on the obtained results, it is clear that hypothyroidism in women is frequently associated with menstrual disturbances. Also, irregularities in menstruation are often more prevalent in severer cases of hypothyroidism as compared to when the condition (hypothyroidism) is mild or moderate mild cases. The most common irregularity of menstruation was found to be menorrhagia.

REFERENCES:

1. Rogers J. Medical progress: menstruation and systemic disease, thyroid disorders. *N Engl] Med* 1958; 259:721.
2. Ross GT, Scholz DA, Lambert EH, et al. Severe uterine bleeding and degenerative skeletal muscle changes in unrecognized myxedema. *] Clin Endocrinol Metab* 1958; 18:492.

3. Goldsmith RE, Sturgis SH, Lerman], et al. The menstrual pattern in thyroid disease. *J Clin Endocrinol Metab* 1952;12:846.
4. Means JH. The thyroid and its diseases. 2nd ed. Philadelphia: JB Lippincott, 1948:233.
5. Warren, M.P. (1996) Evaluation of secondary amenorrhea. *Journal of Clinical Endocrinology and Metabolism*, 81, 437–442.
6. Winters, S.J. & Berga, S.L. (1997) Gonadal dysfunction in patients with thyroid disorders. *The Endocrinologist*, 7, 167–173.
7. Longcope, C. (1996) The male and female reproductive systems in hypothyroidism. In Werner and Ingbar's *The Thyroid*. 7th Edn. (eds. L. Braverman & R. Utiger), pp. 849–852. Lippincott–Raven, Philadelphia.
7. Larsen, P.R., Davies, T.F. & Hay, I.D. (1998) The thyroid gland. In *Williams Textbook of Endocrinology*. 9th Edn. (eds. J.D. Wilson, D.W. Foster, H.M. Kronenberg & P.R. Larsen), pp. 389–515. W.B. Saunders, Philadelphia.
8. Koutras, D.A. (1997) Disturbances of menstruation in thyroid disease. In *Adolescent Gynecology and Endocrinology* (eds. G. Kreatsas, G. Mastorakos & G. Chrousos), *Annals of the New York Academy of Sciences*, 816, 280–284.
9. Krassas, G.E., Pontikides, N., Kaltsas, Th., Papadopoulou, Ph. & Batrinos, M. (1994) Menstrual disturbances in thyrotoxicosis. *Clinical Endocrinology*, 40, 641–644.
10. MOLTZ, L., M. TRAPP, G. BISPINK & F. LEIDENBERGER. 1987. Rational hormonal diagnosis of secondary amenorrhea. *Geburtshilfe-Frauenheilkd.* 47(4): 228-239.
11. BISPINK, L., W. BRANDLE, C. LINDER & G. BETTENDOW. 1989. Preclinical hypothyroidism and disorders of ovarian function. *Geburtshilfe - Frauenheilkd.* 49(10): 881-888.
12. WEISE, H. C., L. MOLTZ, G. BISPINK & F. LEIDENBERGER. 1989. Rational hormonal diagnosis of oligomenorrhea. *Geburtshilfe-Frauenheilkd.* 49(8): 694-700.
13. GERHARD, I., T. BECKER, W. EGGERT-KRUSE, K. KLINGA & G. RUNNEBAUM. 1991. Thyroid and ovarian function in infertile women. *Hum. Reprod.* 6(3): 338-345.
14. Prentice A. Medical management of menorrhagia. *BMJ*. 1999;319:1343–1345. . (27 November.)
15. Scott JC, Mussey E. Menstrual patterns of myxoedema. *Am J Obstet Gynecol*; 90:161-5.
16. Higham JM, Shaw RW. The effect of thyroxine replacement on menstrual blood loss in a hypothyroid patient. *Br J Obstet Gynaecol*. 1992; 99:695–696.
17. Wilansky DL, Greisman B. Early hypothyroidism in patients with menorrhagia. *Am J Obstet Gynecol*. 1989;160:673–677.
18. Blum M, Blum G. The possible relationship between menorrhagia and occult hypothyroidism in IUD-wearing women. *Adv Contracept*. 1992;8:313–317.
19. HEGEDUS, L., S. KARSTRUP & N. RASMUSSEN. 1986. Evidence of cyclic alterations of thyroid size during the menstrual cycle in healthy women. *Am. J. Obstet. Gynecol.* 155(1): 142-145.
20. GLINOER, D. & M. LEMONE. 1992. Goiter and pregnancy: A new insight into an old problem. *Thyroid* 2: 65-70.
21. GLINOER, D., DE NAYER, E. & BOUOUCHE, M. LEMONE, C. ROBYN, A. VAN TEIRTEGHEM, J. KINTHAERT & B. LEIEUNE. 1990. Regulation of maternal thyroid during pregnancy. *J. Clin. Endocrinol. Metab.* 71: 276-287.
22. BAUCH, K., W. MENG, F. E. ULRICH, et al. 1986. Thyroid status during pregnancy and postpartum in regions of iodine deficiency and endemic goiter. *Endocrinol. Exp.* 20: 67-77.
23. CROOKS, J., M. I. TULLOCH, A. C. TURNBULL, D. DAVIDSSON, T. SKULASSON & G. SNAEDAL. 1967. Comparative incidence of goitre in pregnancy in Iceland and Scotland. *Lancet* 2: 625-627.
24. BALEN, A. H. & A. B. KURTZ. 1990. Successful outcome of pregnancy with severe hypothyroidism. Case report and literature review. *Br. J. Obstet. Gynaecol.* 97: 536-539.
25. MAN, E. B. 1975. Maternal hypothyroxinaemia: Development of 4 and 7 year old offspring. In *Perinatal Thyroid Physiology and Disease*. D. A. Fisher & G. N. Burrow, Eds.: 117-129. Raven Press. New York.
26. AN, E. B., W. S. JONES, R. H. HOLDEN & E. D. MELLITIS. 1971. Thyroid function in human pregnancy. VIII. Retardation of progeny aged 7 years: Relationships to maternal age and maternal thyroid function. *Am. J. Obstet. Gynaecol.* 111: 905-916.
27. DAVIS, L. E., K. J. LEVEKO & E. G. CUNNINGHAM. 1988. Hypothyroidism complicating pregnancy. *Obstet. Gynecol.* 72: 108-112.
28. Weeks AD. Menorrhagia and hypothyroidism: Evidence supports association between hypothyroidism and menorrhagia. *BMJ: British Medical Journal*. 2000 Mar 4;320(7235):649.