

## PREVALENCE OF ASYMPTOMATIC GALACTORRHOEA\*

by

A. K. DEBDAS

VINOY JHA

and

AJEET SINGH

### SUMMARY

Out of total 185 cases, breasts were active in as many as 75 cases unassociated with current or recent pregnancy lactation. The causes of galactorrhoea are discussed.

#### Introduction

By definition galactorrhoea is a condition of continuous secretion of milk in the absence of recent pregnancy (Jeffcoate, 1975). However, it is surprising to note from review of literature that the incidence of this somewhat alarming condition is not clearly known (Davajan *et al*, 1978). So, we thought of exploring it and chose the asymptomatic type for our study.

#### Material and Methods

Both breasts of a total of 185 patients (all but one married) attending our Gynaecological out-patient clinic for various Gynaecological disorders over 10 months period from October 1982 were electively examined for evidence of secretion. The case collection was random with the following exclusions—all pregnant patients, all those who had preg-

nancy or abortion within last 6 months, all lactating women and also those who had stopped lactating within 6 months prior to the day of examination, all cases of symptomatic galactorrhoea and all those who were on hormone therapy of any kind or had been on it within last 6 months.

Besides examination of breasts a thorough history and full general and gynaecological examinations were carried out on each of these cases. Drug history was particularly elicited.

In the cases with active or secreting breasts a special note was made of the character of secretion whether it was milky or watery. Cases were labelled as active even if only one breast was active. The inactive group served as controls.

#### Results and Analysis of Data

It was most surprising to note that out of total 185 cases screened in as high as 73 (39.45%) the breasts were active although totally unassociated with current or even recent (within 6 months) pregnancy or lactation. However, none

*From: Department of Obstetrics and Gynaecology, "D" Road Hospital, Telco, Jamshedpur-831 004.*

*\*Presented at the XIIIth annual conference of Telco Medical Society on 22-9-83.*

*Accepted for publication on 27-1-84.*

of these women were aware of this activity of their breast.

As regards character of secretion, since we started noting this particular point a bit late in our study this was mentioned only in 45 cases. Out of this 45 in almost equal number the discharge was watery (21 cases, 46.66%) and milky (24 cases, 53.33%).

The relation of the age of the patients with the activity of breast has been shown in Table I along with age distribution of inactive group. As one would logically expect, over 90% patients of active group was of the age range 21-40 years—the accepted peak reproductive age range. However, the noteworthy thing about the relation of age and breast activity is that, the incidence of active breast reduces drastically after the age of 40 years (4 out of 33 i.e. 12%) in comparison to its incidence in the younger (21-40 years) age group (67 out of 145 i.e. 46%).

Nearly 80% patients of active group were parous but the more noteworthy thing was that 20% were nulliparous.

Table II shows the menstrual cycle profile of the active group. As is evident in the Table, 79.45% of women had normal cycle, 4.10% had frequent (less than 21 days) but regular cycle whereas 5.47% had frequent but completely irregular bleeding. Infrequent menstruation was the presenting complaint in only 4 patients (5.47%) with duration of amenorrhoea not more than 14 weeks in any case. There were 4 (5.47%) post menopausal women in this active group—2 above 50 years of age and 2 below 50 years of age all of whom had hysterectomy. Whether they had salpingo-oophorectomy or not is not known.

Relation of breast activity with the phase of menstrual cycle was assessed in 38 women with normal (28 days) cycle and it was found that roughly 60% women were in the second half and 40%

TABLE I  
Age Distribution-Active and Inactive Group

Age (years)	Active		Inactive		Total
	No.	(%)	No.	(%)	
16-20	2	( 2.73)	5	( 4.46)	7
21-40	67	(91.78)	78	(69.64)	145
41-50	2	( 2.73)	21	(18.75)	23
51 +	2	( 2.73)	8	( 7.14)	10
Total	73	(99.97)	112	(99.99)	185

TABLE II  
Cycle (Menstrual) Profile of Active Group

Cycle (Days)	No.	(%)
Normal (28 ± 7)	58	(79.45)
Frequent (< 21)	3	( 4.10)
Infrequent (> 35)	4	( 5.47)
Completely irregular	4	( 5.47)
Menopausal (had hysterectomy)	4	( 5.47)
Total	73	(99.96)

in the first half of their menstrual cycle.

Analysis of drug history revealed that only 1 of the 73 women with active breast was on antitubercular drug. Four patients of this group were labelled as grossly obese and there was no case with goitre or any type of breast lesion.

#### Discussion

Let us first consider what is the relevance of knowing the prevalence of asymptomatic galactorrhoea. These are two—firstly, to re-appraise the sign 'active breast' for diagnosis of pregnancy and secondly, to diagnose sub-clinical hyperprolactinaemia, specially in infertile patients which comprised 25% of our 'active' cases.

A short review of control of prolactin secretion is relevant here. It is a recent discovery that prolactin secretion by anterior pituitary is neuromodulated and controlled by an endogenous opioid called beta endorphin (endogenous morphin) present in the hypothalamus and mid-brain which operates through special receptors named  $\mu$  and  $\delta$  and mainly three things have been found to regulate the liberation of this key chemical namely suckling, stress—both physical and mental and oestrogen (Grossman and Rees, 1983). Let us consider these one by one.

Of the three stimuli mentioned above that suckling is most powerful and that it operates like simple nervous reflex is well known; so also is the association of galactorrhoea with chronic emotional stress and psychiatric disorders (Jeffcoate, 1975), but, that, even stress of vaginal examination can raise plasma prolactin is a more recent discovery.

The situation with oestrogen is, however slightly more complicated. The well known theory about oestrogen is—

it inhibits prolactin secretion by acting (negative feedback) on hypothalamus and pituitary—as happens during pregnancy (Placental oestrogen) and also artificially in puerperium if oestrogen is given from outside (as for suppression of lactation). However, the recent knowledge about this is—oestrogen not only acts in negative feed-back mode but also in positive feedback mode depending upon its metabolic state in the brain tissue. In this connection, it has been found that while the mother substance oestradiol has a positive feedback action on hypothalamus-pituitary axis—for secretion of prolactin, its principal metabolite 2-hydroxyoestrone (a Catechol oestrogen) has a negative feedback influence on it—the proportion of the two being determined by the activity of an enzyme in the brain tissue called oestradiol 2-hydroxylase which, curiously, is also under control of beta endorphin (Pitkin and Zlatnik, 1982-a; Grossman and Rees, 1983) and through it is affectable by stress.

Now to understand the endocrinal causes of pathological secretion of prolactin, a review of relation of prolactin with other endocrine glands is essential.

Both thyrotrophin releasing hormone (TRH) and thyroid stimulating hormone (TSH) have been shown experimentally to have prolactin secretion stimulating action. The clinical analogue of this is the situation with hypothyroidism in which both these are raised and so also the prolactin (Naguib *et al*, 1982; Pitkin and Zlatnik, 1982-b). Prolactin is related to adrenocortical function through stress. The relation of prolactin with gonadotrophin is inverse, mediated by a common factor—the level of endogenous opioids through its hypothalamic dopamine secretion regulation action because,

dopamine while having inhibitory action on prolactin secretion has stimulatory action on gonadotrophin secretion (Grossman and Rees, 1983). Besides this, prolactin has been shown to make ovaries refractory to gonadotrophins particularly inhibiting the action of LH on LH receptors on corpus luteum thereby causing progesterone deficiency and defective luteal phase (Mahgoub, 1978; Naguib *et al* 1981).

As already mentioned our incidence of examiner expressed breast activity was 39.45% which is certainly surprising. More surprising, however, is the fact that incidence of this condition has been reported in the literature from as low as 0.1% to as high as 30% (Davajan *et al* 1978). In our view this wide variation in incidence can perhaps be explained by the factors as the day of the cycle when examined (more activity in second half), what proportion of patients in any particular series were parous and whether the breast was labelled as active only when both the breasts were active or even when only one breast was active.

The literature on whether breasts undergo cyclical change like the uterus does in rhythm with ovarian cycle is very scanty. However, mention has been made of occurrence of increased epithelial activity with slight occasional secretion within the ducts and acini of breast in the luteal phase of cycle which regresses during menstruation (Jeffcoate, 1975). Our findings somewhat tallies with the above findings in that nearly 60% of our patients with active breasts were between 14th to 28th day of their (28 day) cycle. However, our study also shows that breasts can be active even in follicular phase of the cycle although not commonly.

That 80% of women of our active group and regular cycle is an evidence that asymptomatic galactorrhoea is quite common even with regular cycle.

It is well known that most drugs which have action on hypothalamus can affect prolactin secretion. Drugs which increase prolactin secretion are—phenothiazines (Chlorpromazine, some antiemetics), tri-cyclic anti-depressants, ganglion blocking agents, amine depleting agents (reserpine), antidopaminergic drugs (metoclopramide-Reglan), exogenous opioids (morphin), combined (oestrogen and progestogen) "Pill" etc. It is thought that the recent increase in the incidence of galactorrhoea may be due to mass taking of 'pill' and tranquiliser. Breast activity in none of our patients was due to iatrogenicity.

The rare causes of galactorrhoea that must be borne in mind while investigating any such case are—tumours of pituitary and midbrain, basal meningitis, encephalitis, renal failure, diseases of lungs, diseases of chest wall, even recent thoracic surgery etc. (Jeffcoate, 1975). Even some cancer tissue has been reported to produce prolactin. By the way, since only a very small proportion of our patients had X-ray of sella and prolactin assay, it has not been possible for us to assess whether any of our cases had any pathological cause or not.

#### Conclusion

Even in non-pregnant and non-lactating woman the incidence of examiner expressed activity of breast is quite high i.e. 40% of women so examined which would indicate that active breast is an unreliable sign of pregnancy.

References

1. Davajan, V., Kletzky, O., March, C. M., Roy, S. and Mishell, Jr., D. R.: Am. J. Obstet. Gynec. 130: 894, 1978.
2. Grossman, A. and Rees, L. H.: Brit. Med. Bull. 39: 83, 1983.
3. Jeffcoate, T. N. H.: Principles of Gynaecology, 4th edition, Butterworth, London and Boston, 1975, Page 119 to 123, 1975.
4. Mahgoub, S. E.: Int. J. Gynec. Obstet 16: 124, 1978.
5. Naguib, Y. A., Darwish, N. A., Shaarawy, M., Nagui, A. T., Thabet, S. M. and Azim, S. A.: Int. J. Gynec. Obstet. 19: 285, 1981.
6. Pitkin, R. M. and Zlatnik, F. J.: Year Book of Obstet. Gynec. 1982, Year book medical Publishers, Chicago, (a) 373-374, (b) 379, 1982.