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Exploring the epidemiology of insufficient breast milk secretion: Insights from Aligarh and surrounding regions

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Abstract

Introduction: Insufficient breast milk secretion affects atleast 15% of women and has been a leading factor responsible for disobedience of exclusive breastfeeding practice world wide. Breast discomfort, sore nipples, mastitis, inverted nipples, presence of breast implants are other factors which troubles getting the infant to suck. Therefore, poor weight gain of the babies, hypernatremia and dehydration owing to insufficient milk intake are all common issues that women encounter while breastfeeding their babies. Low breast milk supply can be caused by a variety of factors, most of which are concerned with breast feeding management and are easily correctable. These issues necessitate a thorough understanding of nursing techniques. Therefore, enhancing mother's own milk production is most fruitful among all remedies by correcting the underlying cause with use of drugs capable of amplifying the breast milk secretion. This can be achieved with use of galactogogues.

Material and methods: This study was conducted to find out the prevalence of insufficient breast milk secretion in lactating women having baby less than 1 month of age.

Observation and Result: In our study, low breast milk secretion is more prevalent in women 21-27 yrs of age of upper middle socioeconomic class who delivered the baby by LSCS and are non-working. The prevalence is almost similar in both primi and multiparous women.

Conclusion: Despite of the availability of better health facilities, insufficient breast milk secretion is quite high and needs to be addressed as early as possible by proper breast feeding counselling and following WHO recommendations of exclusive breastfeeding practice in order to meet the WHO and UNICEF target of 70% prevalence of EBF by 2030.

Keywords: Insufficient Breast Milk Secretion; Low Milk Supply; Exclusive Breastfeeding; Breast milk; Hypogalactorrhoea

1. Introduction

Insufficient breast milk secretion, low milk supply, lactation insufficiency, insufficient milk syndrome or hypogalactorrhoea is the synthesis of milk in a lactating woman in daily amount that is not sufficient to fulfil the nutritional needs of her baby. Lactation failure is prevalent in postpartum women leading to low milk production and early weaning. Lactation failure (agalactias) affects at least 5% of women, whereas poor breast milk supply affects roughly 15% of women (hypogalactias) [1]. Several nations around the world including West Africa, have followed the WHO's breastfeeding recommendation but faces several obstacles lowering the number of children who could possibly be breastfed. In the United States, for example, less than half of newborns (49.4%) receive any breast milk by the age of six months, and only about a quarter are breast-fed for a year (26.7%) [2]. Similarly, in India, the percent of babies being

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fed exclusively on breast is too low. Breast discomfort, sore nipples, mastitis, inverted nipples, presence of breast implants are other factors which troubles getting the infant to suck. Therefore, poor weight gain of the babies, hypernatremia and dehydration owing to insufficient milk intake are all common issues that women encounter while breastfeeding[3]. The number of nursing women whose breast milk supply is insufficient is on the rise [4]. Breastfeeding is impacted by nutritional and non nutritional factors that affect milk production and secretion (as related to endocrinology, health, climate and management). These factors influence physiological activities that govern non-infectious agalactias and hypogalactias, the latter of which is the most common condition among breastfeeding women [5]. Low breast milk supply can be caused by a variety of factors, most of which are concerned with breast feeding management and are easily correctable. These issues necessitate a thorough understanding of nursing techniques. Scheduled nursing, skipping breastfeeding, supplementing the baby's food with infant formulae, pre-lacteals feeds, maternal emotional state such as anxiety, depression and improper latching of the baby on the breast are some of these factors. Insufficient mammary tissue (hypoplasia), medications (hormonal contraceptive pills), retained placenta, diseases (diabetes, hepatic disorders), metabolic conditions (obesity), previous breast surgeries, caesarean section, sick baby, thyroid and other hormonal disorders are some of the more complicated causes of low breast milk supply. Toxins in the environment such as pesticides are other culprits. According to a study, daughters of mothers who grew up in a pesticide-contaminated environment had a substantially higher frequency of insufficient mammary tissue than those who lived on the same area's hilltop [6]. Various milk banks are being established in response to the difficulty of insufficient milk production (hypogalactia) or the complete absence of milk production (agalactia) to serve the growing baby[7]. Some parents have used donor breast milk banks and it is now suggested as a backup option if the mother's own milk is unavailable. Pasteurization has become necessary due to the possibility of disease transmission, such as HIV, CMV and Creutzfeldt-Jakob disease. The amount to which pasteurised donor breast milk retains the biological qualities of mother's milk, however, is a key problem.There is a scarcity of data on the quality of donor milk. Human milk banks that are open for business are unable to meet demand especially for the most vulnerable newborns like low birth weight babies, preterm babies, IUGR etc. [8]. Therefore, enhancing the mother's own milk production is most fruitful among all remedies by correcting the underlying cause with use of drugs capable of amplifying the breast milk secretion. This can be achieved with use of galactogogues. This study was conducted to find out the prevalence of insufficient breast milk secretion in lactating women having baby less than 1 month of age.

2. Material and Method

This study was conducted on patients enrolled from Obstetrics and Paediatrics OPD of dept. of Amraze-Niswan wa Atfal, Ajmal Khan Tibbiya College and Maternity Ward of Jawahar Lal Nehru Medical College, AMU, Aligarh from March 2021 to September 2022 who complain of insufficient breast milk secretion. The patients were enrolled randomly unit by unit by random number table. Out of 2163 deliveries, 1021 patients had perceived low milk supply, 710 patients did not fit in the proposed age group and 332 patients delivered babies with some congenital anomalies. Therefore, a total of 100 patients were enrolled who fulfilled the inclusion criteria. The key parameters of the study have been mentioned as follows:

2.1. Method of data collection

- History taking and clinical examination of mother and her baby.

2.2. Study design

- Observational study

2.3. Duration of study

- One and half year

2.4. Selection criteria

- Patients who complain of insufficient breast milk secretion assessed on the basis of history and clinical examination were included in the study by their voluntary consent.
- Patients between the age of 21-35 years.
- Patients having baby of 0-1 month of age with complaints of insufficient breast milk secretion with poor anthropometric measures of her child (weight, height, head circumference).

2.5. Exclusion criteria

- Patients < 21 years and >35 yrs of age.
- Patients having baby of >1 month of age.
- Patients with improper positioning and latching while feeding their children on breast.
- Presence of any systemic illness in the patient or in her child like tuberculosis, HIV/AIDS, diabetes mellitus, congenital anomalies etc.
- Patients who do not will to be the part of study.

3. Observation and Result

Table 1 Demographic distribution on the basis of age

Age	No. of patients	Total % of patients
21-27	66	66
28-35	34	34
Total	100	100

As it is evident from table 1, out of total 100 patients (n=100) enrolled for the trial, 66% (n=66) patients were in the age group 21-27 yrs and 34% (n=34) of the total patients of the study were between the age group of 28-35 yrs. The prevalence of insufficient breast milk secretion in 21-27 yrs is 66% and that in 28-35 yrs is 34%.

Table 2 Demographic distribution on the basis of Parity

Parity	No. of patients	Total % of patients
Primipara	49	49
Multipara	51	51
Total	100	100

It is clear from table 2 that 49% patients (n=49) out of 100 were primipara whereas 51% (n=51 patients were multiparous patients. The prevalence in primi para is 49% and that in multipara is 51%.

Table 3 Demographic distribution on the basis of occupation

Occupation	No. of patients	Total % of patients
Housewife	98	98
Working (job)	02	02
Total	100	100

On the basis of occupation, it is evident from the table 3 that out of the total 100 patients, 98% (n=98) patients were housewives and 2% (n=2) patients were working. The prevalence is 98% in housewives and 02% in working women.

Table 4 Demographic distribution on the basis of religion

Religion	No. of patients	Total % of patients
Muslim	86	86
Non-muslim	14	14
Total	100	100

Table 4 depicts that out of total 100 patients (n=100), 86% (n=86) patients were muslims whereas 14% patients (n=14) were non-muslims. The prevalence is 86% in muslim population and 14% in non-muslims.

Table 5 Demographic distribution on the basis of socioeconomic status (Modified Kuppuswamy scale)

SES	No. Of patients	Total % of patients
Upper class	08	08
Upper middle	48	48
Lower middle	34	34
Upper lower	01	01
Lower class	09	09
Total	100	100

It is clear from table 5 that out of the total 100 patients (n=100), percentages of upper class, upper middle, lower middle, upper lower and lower class were 8% (n=8), 48% (n=48), 34% (n=34), 01% (n=1) and 09% (n=9) respectively. The prevalence of insufficient breast milk secretion in different socioeconomic groups is 8%, 48%, 34%, 1% and 9% respectively.

Table 6 Demographic distribution on the basis of mode of delivery

Mode of delivery	No. Of patients	Total percentage of patients
Vaginal delivery	42	42
Caesarean section	58	58
Total	100	100

It is clear from table 6 that out of the total 100 patients (n=100), 58% patients (n=58) delivered the baby by LSCS whereas 42% (n=42) of the total 100 patients delivered vaginally. The prevalence is 42% in patients who delivered vaginally and 58% who delivered by LSCS.

4. Discussion

On the basis of age, 66% of the subjects were from 21-27 yrs and 34% patients were from age group 28-35 yrs. The predominance of the patients in the age group 21-27 yrs may be due to the fact that it is the commonest age in India when females get married [9]. As a result, the pregnancy, childbirth and breast feeding related problems tend to be higher in this age group.

On the basis of parity, 49% patients were primipara while 51% patients were multipara. The possible reason for more subjects in primipara group may be due to lack of knowledge, attitude and practice (KAP) of exclusive breast feeding that leads to a perception of not having enough milk which results in infrequent suckling and a true reduction in breast milk production as also described by Mathur et.al (2008) in their study [10]. However, almost all the multiparous patients revealed the past history of insufficient breast milk secretion and inappropriate exclusive breastfeeding in previous deliveries. This also implies that the awareness and practice of exclusive breastfeeding in India is still too low [11] and a milestone has to be attained to achieve the target of exclusive breastfeeding in majority of population.

On the basis of religion, most of the patients were from muslim community. The study was conducted in muslim dominant area which may explain the predominance of muslim patients in the study.

On the basis of socioeconomic status recorded as per Revised Kuppuswamy socioeconomic scale, [12] approximately half of the total patients were from upper middle socioeconomic status (48**%).** The percentages of upper class, lower middle, upper lower and lower class were found to be 8% , 34%, 01% and 09% respectively. This finding of our study had not been in agreement with previous studies which delineated the fact that insufficient breast milk secretion prevail in lower socioeconomic strata(Veerbhan et. al [13]. However, conversely, Kalpesh [14] in his study suggested that bottle

feeding has been mostly exercised in upper socioeconomic class. Therefore, it's not always the case that more educated and socioeconomically privileged mothers are more aware of and comprehend the benefits of breast feeding. Health education particularly during ANC check up should place a strong emphasis on the value of breastfeeding and avoiding bottle use. The finding of our study in this domain was in agreement with the study conducted by Kalpesh et.al and the reason put forth by him was valid in our study as well. Therefore, it has been advised to conduct further research in this domain on large sample size to find out more appropriate and authentic reason behind.

On the basis of mode of delivery, 58% patients delivered the baby by LSCS whereas 42% patients delivered vaginally. The probable reason behind the predominance of LSCS patients may be social and cultural taboos and disbelief of the care takers that an operated mother can not breast feed her baby particularly within few hours after birth which are considered to be most effective to continue exclusive breastfeeding for next 6 months. This belief results in a delay in initiation of breast feeding. Shahreen et. al [15] and Smith et. al [16] in their studies demonstrated that early initiation of breastfeeding enhances breastfeeding success and ensures exclusive and prolonged breastfeeding by stimulating continuous synthesis of breastmilk.

Although there were certain limitations of our study on grounds of infrastructure, resources, financial support and small sample size, this study may serve as a relay and opens a new door for further research on large sample size with better tools and research techniques in order to obtain more precise result and to find out the prevalence of insufficient breast milk secretion both locally and globally.

5. Conclusion

It has been concluded from the study that despite of the advancements in health facilities, the prevalence of insufficient breastmilk secretion is quite high and needs to be addressed as early as possible by proper breast feeding counselling and following WHO recommendations of exclusive breastfeeding practice in order to meet the WHO and UNICEF target of 70% prevalence of EBF by 2030.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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