PREGNANCY IN WOMEN OVER FORTY

Thesis

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By

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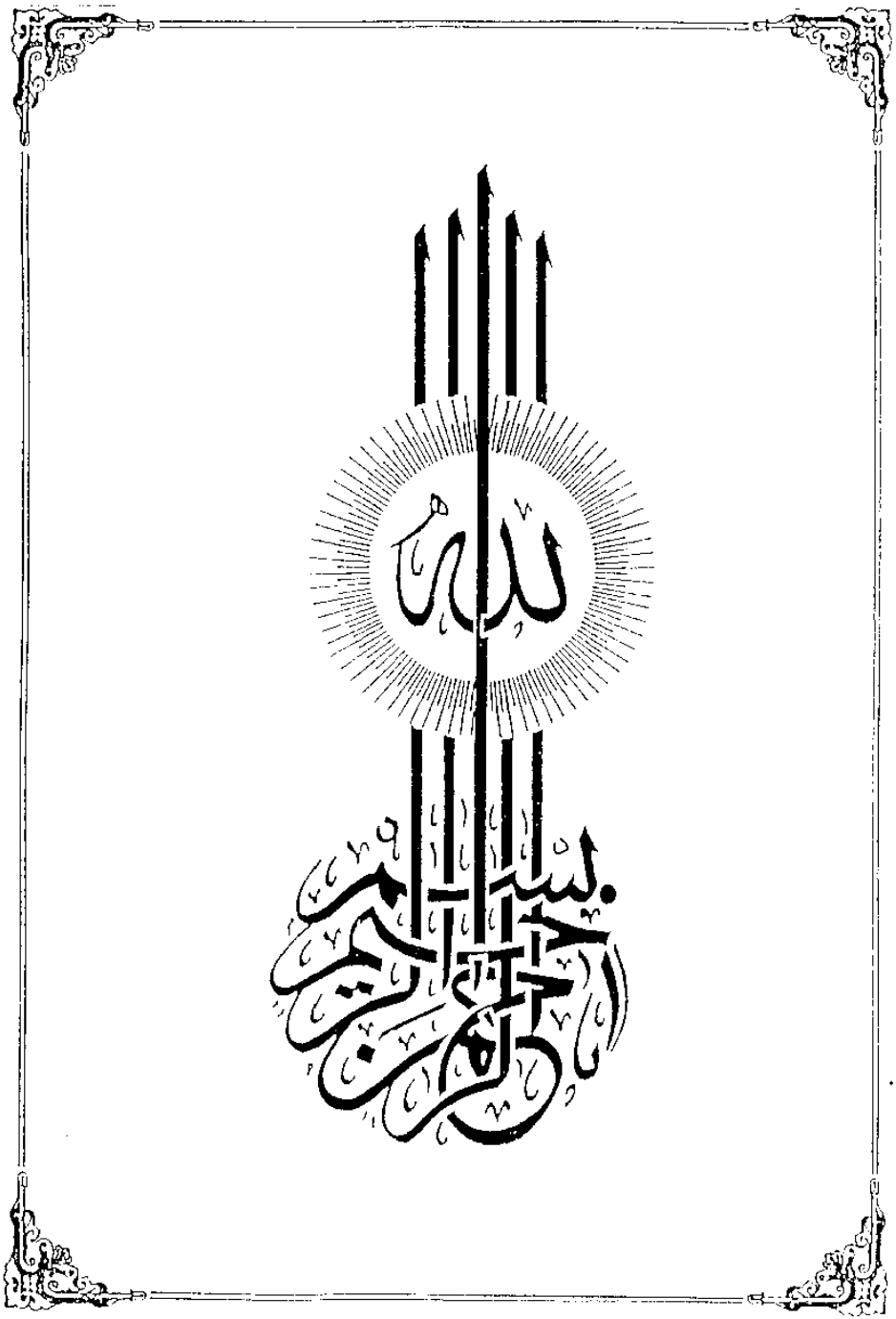

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INTRODUCTION

The changing life patterns for women in our current society includes education, entering work force and developing a career outside of the home. Accompanying this, is often a postponement of childbearing. Furthermore, failure of proper contraceptive practice among elderly women may result in an unplanned pregnancy at an older age.

Although age was considered for many years a reproductive risk factor on both mather and child, its direct effect on pregnancy outcome remains an unresolved issue. Previous reports have arrived at discordant conclusions, perhaps because advanced maternal age is associated with many other variables in patient characteristics (Koren et al., 1963; Kajanoja and Widhiom, 1978; Israel and Deutschberger, 1964, Kirz et al., 1985 and Lehmann and Chism, 1987). The older patients vary with respect to parity and the presence or absence of underlying medical disorders.

AIM OF THE WORK

To evaluate the incidence of Egyptian pregnant women at or above 40 years attending Ain Shams University Hospital, Maternity Unit. Furthermore, we were interested in reviewing the various effects of pregnancy at or above the age of 40 years on maternal health, obstetric complications and perinatal outcome.

Review of Literature

FERTILITY AMONG ELDERLY WOMEN

Sarah, the wife of Abraham, was many years postmenopausal when she born Isaac, at the age of 91 years. No other conceptions at such advanced age can be documented (Nelson and Sons, 1952).

While there have been occasional reports of pregnancy in women of 50 years and older, a decreased incidence has been observed beyond the age of 40 years (Novak, 1970 and McElin, 1971). The infrequency of such an event has prompted speculation that, at such advanced age, either ovulation does not occur, or the corpus luteum is incapable of supporting implantation (Sharman, 1966 and Novak, 1970).

Susan and David (1988), have recently reported that, between 1977 and 1985 there was a 65% increase in births to women aged 35 or more in England and Wales. Two factors, of roughly equal importance, were responsible for this differential increase. Firstly, the proportion of older women, (35-44) among all women of reproductive age (15-44), increased from 28% in 1977 to 31% in 1985. Secondly, in the same period, the fertility rate for

women aged 35-39 increased from 18.2 to 24.1 per 1000 and for women aged 40-44 from 4.1 to 4.6 per 1000..

The increased fertility rate among older women is not due to an extension of the reproductive period, but due to a delay in child bearing. This delay was seen in women married only once, and also in those who had been remarried. Any attempt to ascertain the average age of termination of reproduction in human is complicated by the obvious influence of the socioeconomic factors and the wide spread use of contraceptive measures. Although the socioeconomic factors have undoubtedly always influenced the age of childbearing in the United States, the data obtained by Day (1958), suggested that these factors have changed through the years. He found that in 1910, 11% of the women who were between 45 and 49 years of age had children under 5 years of age; whereas in 1950, this figure was only 5%.

Although there have been some reports that women who had an early menarche also have an early menopause (Georgi, 1968), yet several reports by Benjamin (1960), Hauser et al. (1963) and Klemm et al. (1963) have failed to support this contention. Benjamin (1960), found that nulliparous women tend to have an earlier menopause than

do multiparous women; but this was not supported by an American Health Statistics analysis in 1966, which indicated that there was no difference in the age of menopause between multiparous up to four deliveries and nulliparous women (MacMahon and Worcester, 1966). Formmer (1964), found that the age of menopause had been increased during the last 100 years and this increase amounted for about 4 years in Great Britain. Although a definite cause for this change could not be determined, it is possible that improving living conditions, including diet, has been of importance. An increase in the age of menopause in Germany between the period during and immediately after the second world war and the present time may also have a similar explanation (Klemm et al., 1963). Georgi (1968), stated that an extension of the reproductive life span much beyond 50 years is far from reality; such change appears to be dependent upon slowing the rate of atresia of oocytes. However fruitful investigation which could lead to the improvement of the chances of late premenopausal women becoming pregnant, maintaining pregnancy, and delivering a normal child, particular attention might well be paid to the control of gonadotropin release by the hypothalamus and also to age changes in the ovum which may be responsible for the increase in the congenital

anomalies and intrauterine loss which are characteristics of this period (Georgi, 1968).

Ovulation in old age:

The number of oocytes in the fetal ovary is maximum at the 20th week of gestation. There is then a progressive depletion during the second half of intrauterine life, childhood, puberty and through out the rest of the reproductive period (Treloar, 1967). In all mammalian species the reproductive capacity is initiated at puberty, increases over a relatively short period of time, remains at a high level for a variable lentgh of time and declines at a rate which is characterestic of each species. This childbearing period, from puberty to menopause, comprises:

Optimal reproductive period: During this time of life the anatomic and physiologic condition of the healthy individual is best suited for succesful reproduction.

Period of reproductive decline: In many respects this period is the counter part of the pubertal period, although much more variable in length. Reproductive

capacity declines relatively rapidly and terminates with a considerable portion of life expectancy still ahead (Georgi, 1968).

With aging, not only the total number of ovarian follicles decreases, but also the oocytes that remain are those which are most resistant to stimulation by gonadotrophins. In the early reproductive years, the normal feedback mechanisms of the hypothalamus and pituitary are usually more than sufficient to compensate for any increase in the resistance of the follicles to stimulation by gonadotrophins and to ensure regular ovulation, normal corpus luteum formation and a regular menstrual cycle. From about the age of 35 years onwards, follicular development tends to become progressively more deficient and in the last 5 to 15 years of reproductive life the proportion of anovulatory cycles increases and the menstrual cycle may become irregular with unduly long or short cycles (Treloar, 1967). Bloch (1953), obtained ovaries from 150 females, aged between 6 and 44 years, who died a sudden death and had not been pregnant up to one year before hand; he showed that the total number of primordial follicles in each pair of ovaries were 8300 in women in their early forties. The incidence of anovulatory cycles, as estimated from basal

body temperature records by Doring (1969), increased from a range of 3-7% in women aged 26-40 years, to a range of 12-15% in those aged 41-50 years. Sharman (1966), estimated the total incidence of anovulatory cycles in women over 40 years to be 25%.

Although the menopause is generally considered to indicate the end of reproductive life, there have been scattered reports which have been summerized by Snaith and Williamson (1947) of women who have became pregnant after the menopause. However, Krohn (1958) had pointed out that these cases are so rare; and the interval between cessation of menstruation and conception is often so short that the basic rule would appear quite valid; nevertheless, it is important to point out that cessation of menstruation need not indicate that the ova are completely exhausted or that hormonal secretions by the ovary have been stopped. Novak (1970) had observed that in his study of 200 patients over the age of 50 who underwent oophrectomy with hysterectomy; he found that a high percentage (23%) demonstrated histologic evidence of recent corpus luteum. Tulandi et al. (1981) reported that the previous observation and the occurrence of pregnancy in patients aged 48 years in their study raise the question, whether ovulation in some women can occur

as long as the last primordial follicle remains. However, the corpora lutea that form from ruptured follicles in some aging females secrete inadequate amounts of hormones. As a result menstrual cycles are shortened or abortion may be more likely. Doring (1969) note that the incidence of menstrual cycles with short luteal phases increased from 18% in women aged 40-45 years to 36% in those aged 45-50 years.