Epidemiology and prevention of preterm labor.

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The intervention for prevention of preterm birth is one of the essential aims of a global intervention that began in 1971 and which is still going on.

To aim at a real primary prevention policy involves the possibility to intervene before any threat of preterm labor, before any necessity to propose hospital admittance and betamimetic drugs treatment.

The choice was to conduct a study on the entire population of the region of Haguenau (eastern France) on a strictly defined geographical basis, a small city and its region, a population composed of a large number of working-class women with high prenatal risks.

The first phase of the study consisted in setting up the data collection : an observation file has been elaborated, with collection of information on the general characteristics of each patient, her previous gynaecological history, her profession and studies level. Such data was collected at the first prenatal consultation, and then at each successive visit, at birth, and during the neonate phase. This survey was completed by a study conducted on children when they reached 6 and 11 years in age. All these data has been computerized.

The global intervention for prevention of preterm birth has yet been described in detail elsewhere (1), with :
1/ A detection of the risk factors at the first prenatal visit and during each of the following consultations. This research of risks factors takes account the previous medical history, abnormal signs appearing during pregnancy, such as metrorrhagia, the shortness of cervix or the opening of the inner os. A precise questioning is realized with each patient in order to detect in her everyday life the conditions having a triggering action on uterine contractions, such as physical exertion. All these risk factors have been obtained from the local data base.
2/ The prevention policy involves several steps. The first one is a precise information to patients on their level of risks, a particular effort being made for nullipara in order that they could be able to recognize early signs indicators of risks, such as uterine contractions. The second one is an analysis of dayly physical efforts, a long journey by car, a removal, or a long daily commuting time.

3/ The third intervention consisted in obtaining a reduction of physical efforts connected with professional fatigue. The main tool used to obtain this reduction of physical efforts was the prescription of cessation from work for high risk women, while sometimes a change in the work post was enough.

PERINATAL STUDY OF HAGUENAU RESULTS OF THE PREVENTIVE PROGRAM FOR PRE-TERM BIRTHS.

PERIODS	single Births	Pre-term egal or less than 36 w		Pre-term egal or less than 34 w	
		n	%	n	%
1971 05/1973	3496	222	6.35	109	3.12
06/1973 1978	6132	315	5.14	153	2.49
1978 1982	6758	294	4.35	117	1.73
p.value		.001		.001	
CHI.2		18.26		20.58	

RESULTS

A/ Table 1 analyses the evolution of preterm birth rate for the whole population concerned by the survey. Preterm birth was defined as $\leqslant$ 36 weeks, and very early deliveries as $\leqslant$ 34 weeks. We have distinguished three successive historical phases in our analysis. The first one goes from the beginning of the survey, 1st january 1971, until the end of May 1973, and is called period of observation and data collection. The second phase begins in June 1973. It consists in the implementation of preventive actions, including the establishment of a scoring system analysis for preterm birth risk, applied on one case on two : the pregnant women come earlier and more frequently. The third phase goes from

PRE-TERM $\leqslant$ 36 weeks

	Nulliparous	Parous previous term birth	Parous previous pre-term birth
1971 - 05/1973	1	1	1
06/1973 - 1978	0.74	0.92	0.81
1978 - 1982	0.64	0.69	1.02

PRE-TERM $\leqslant$ 34 weeks

	Nulliparous	Parous previous term birth	Parous previous pre-term birth
1971 - 05/1973	1	1	1
06/1973 - 1978	0.78	0.88	0.77
1978 - 1982	0.62	0.49	0.67

PERINATAL STUDY OF HAGUENAU RESULTS OF PREVENTIVE PROGRAM FOR PRE-TERM BIRTHS.

PERIODS	PRE - TERM BIRTHS $\leqslant$ 36 weeks FOLLOWING MATERNAL EDUCATION		
	Up to 9	10 - 12	$\leqslant$ 13 +
1971 - 05/1973	1	1	1
06/1973 - 1978	0.77	0.72	1.22
1978 - 1982	0.64	0.61	0.90

PERIODS	PRE - TERM BIRTHS $\leqslant$ 34 weeks FOLLOWING MATERNAL EDUCATION		
	Up to 9	10 - 12	$\leqslant$ 13 +
1971 - 05/1973	1	1	1
06/1973 - 1978	0.66	0.80	1.22
1978 - 1982	0.39	0.73	0.90

1979 till 1982, and demonstrates a lasting change, for the patients, in their attitudes and habits concerning their pregnancy and its followup.
B/ The reduction of preterm births varies function of the previous medical history of the patients. Tables show that a significant reduction is obtained for the nullipara or parous women who have no previous history of preterm birth. The reduction of premature births in nullipara is of 36 % ($\leqslant$ 36 weeks) and of 38 % ($\leqslant$ 34 weeks), and the reduction of this rate in multipara having no previous history of preterm delivery is of 31 % ($\leqslant$ 36 weeks) and of 51 % ($\leqslant$ 34 weeks). What is surprising is that there is no reduction of preterm births for women having a previous history of preterm birth. The best results are obtained of nullipara and parous with a previous term birth.
C/ The results of our prevention policy were analyzed in relation with the education level of the patients (Table 3). During the observation period, 1971-1973, the rate of preterm births is highly correlated with the number of school years ; this study demonstrated that a prevention policy is more efficient for patients of a low level of education, defined as $\leqslant$ 9 years of schooling, or of a middle level, defined as 10 to 12 years than for high level educated patients, where the preterm birth rate is not significantly reduced.

These observations are true for preterm birth ($\leqslant$ 36 weeks) as well as for very early preterm birth ($\leqslant$ 34 weeks).

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