



# Iodine status in women after early miscarriages in Czech Republic

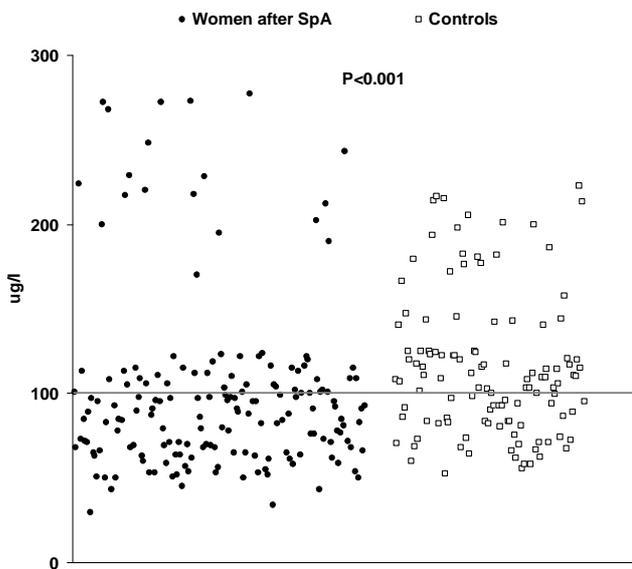
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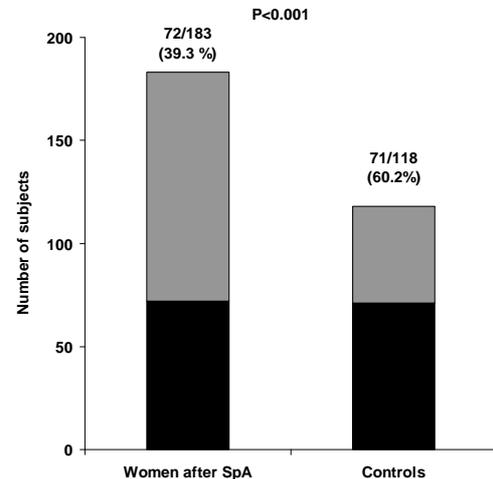
## Background

Low iodine intake during pregnancy may cause thyroid dysfunction in pregnant women and their newborn. Moderate-to-severe iodine deficiency during pregnancy often linked by overt/subclinical hypothyroidism or hypothyroxinemia increases rates of spontaneous abortion (SpA), reduces birth weight, increases infant mortality (Zimmermann 2011). It remains unclear if the rate of SpA, other complications of pregnancy are affected also by mild maternal iodine deficiency in laboratory euthyroid subject. The aim of the study was to determine iodine status in women after SpA and to compare it with randomly chosen age-comparable control women recruited from general population.

**Fig. 1. Urinary iodine concentration in women after spontaneous abortion and controls**



**Fig. 2. Prevalence of adequate iodine intake among women after spontaneous abortion and controls**



## Subjects and methods

A total of 183 consecutive women after SpA before 12<sup>th</sup> week of pregnancy and 118 age-comparable women recruited from general population as controls were included in the study. Women with history of thyroid diseases were excluded. Within 4-12 weeks after SpA all women were examined clinically, laboratory [urinary iodine concentration - UIC (absorption spectrophotometry), serum concentrations of thyroid stimulating hormone - TSH, free thyroxine - FT4, antibodies to thyroid peroxidase - TPOAb, antibodies to thyroglobulin - TgAb). Among women after SpA, 72 were supplemented by tablets with iodine in prior pregnancy, 73 were not and in 38 the information was not available.

**Table 1. Urinary iodine concentration and thyroid laboratory parameters in women after spontaneous abortion and controls**

	Women after SpA (N=183)	Controls (N=118)	P
UIC	92.00 (68.00-113.00)	108.6 (83.5-124.9)	<0.001
FT4 <sup>1</sup>	14.83±1.80	15.58±1.769	-
TSH	1.77 (1.25-2.31)	1.68 (1.09-2.11)	0.110
Positive TgAb	18 (9.95 %)	21 (11.60 %)	0.735
Positive TPOAb	18 (9.95 %)	21 (11.60 %)	0.735

Data are expressed as median (interquartile range) for UIC and TSH, mean±standard deviation for FT4 and prevalence of positivity for TgAb and TPOAb.

<sup>1</sup> Comparison of FT4 between women after SpA and controls was not performed, because of different analytical method.

## Results

- Median of urinary iodine concentration (UIC) was lower in women after spontaneous abortion (SpA) as compared to controls (92 vs. 108.6 ug/l, P<0.001) (Fig. 1).
- Only 72/183 (39.3 %) of women after SpA had sufficient iodine intake (UIC ≥100 ug/l) in comparison with 71/118 (60.2 %) controls (P<0.001) (Fig. 2).
- There were no significant differences of thyroid function and prevalence of positive thyroid antibodies either between women after SpA and controls or between iodine deficient and iodine sufficient women (Table 1).
- There was no significant difference of UIC between women supplemented with tablets with iodine in previous pregnancy in comparison to those who were not.

## Conclusions

- ▶ More than 60 % of women after spontaneous abortion had mild or moderate iodine deficiency determined by urinary iodine concentration, although 39 % of them used iodine-containing vitamin supplements in prior pregnancy.
- ▶ There were no significant changes of thyroid function in women after SpA with mild iodine deficiency.
- ▶ There was no significant difference of urinary iodine concentration between women supplemented with iodine-containing vitamins in prior pregnancy in comparison to those who were not.

## References

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