

Intra-abdominal pressure before and after caesarean section

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Background

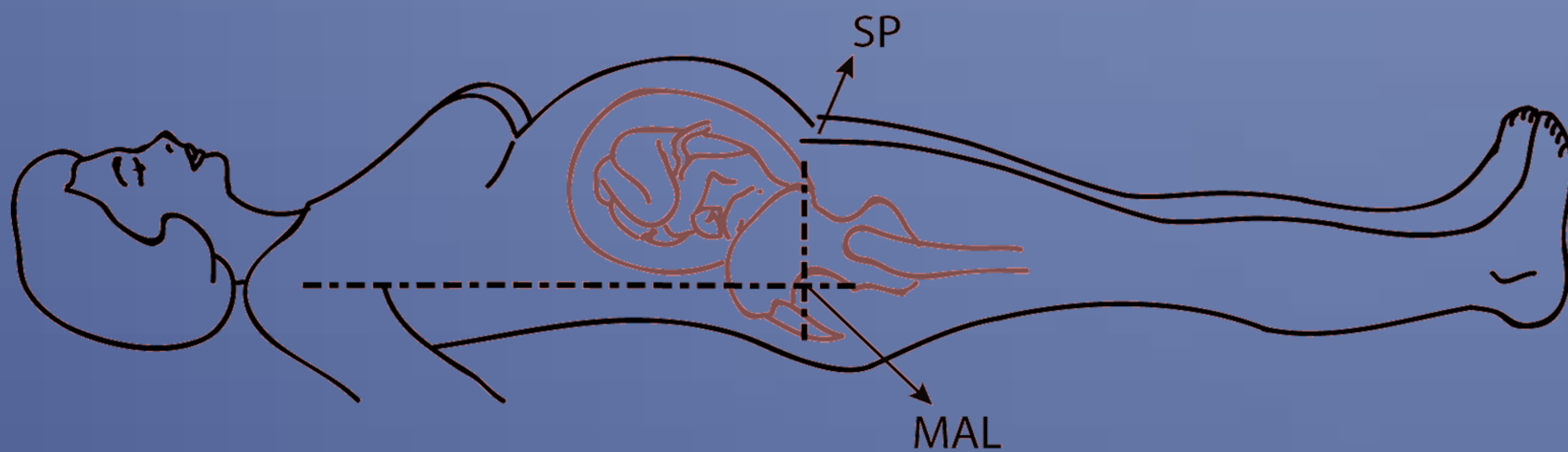
It is well known that elevated intra-abdominal pressure (IAP) relates to organ dysfunction, high morbidity and even mortality. Today, little is known about values of IAP during pregnancy, either healthy or complicated pregnancies.

Objective

The aim of this study is to investigate the range of IAP in uncomplicated term pregnancies, before and after caesarean section.

Methods

In 24 pregnant women who underwent a planned caesarean section (SC), the intra-abdominal pressure was measured one hour before and 24 hours after the SC, using the Foley Manometer Low Volume (FMLV) (Holtech Medical, Charlottenlund, Denmark). IAP was obtained in supine position and at the end of expiration. The mean of three consecutive single observer IAP measurements, with a 10 minutes interval, was calculated. None of the patients were in labour or had severe gestational diseases.



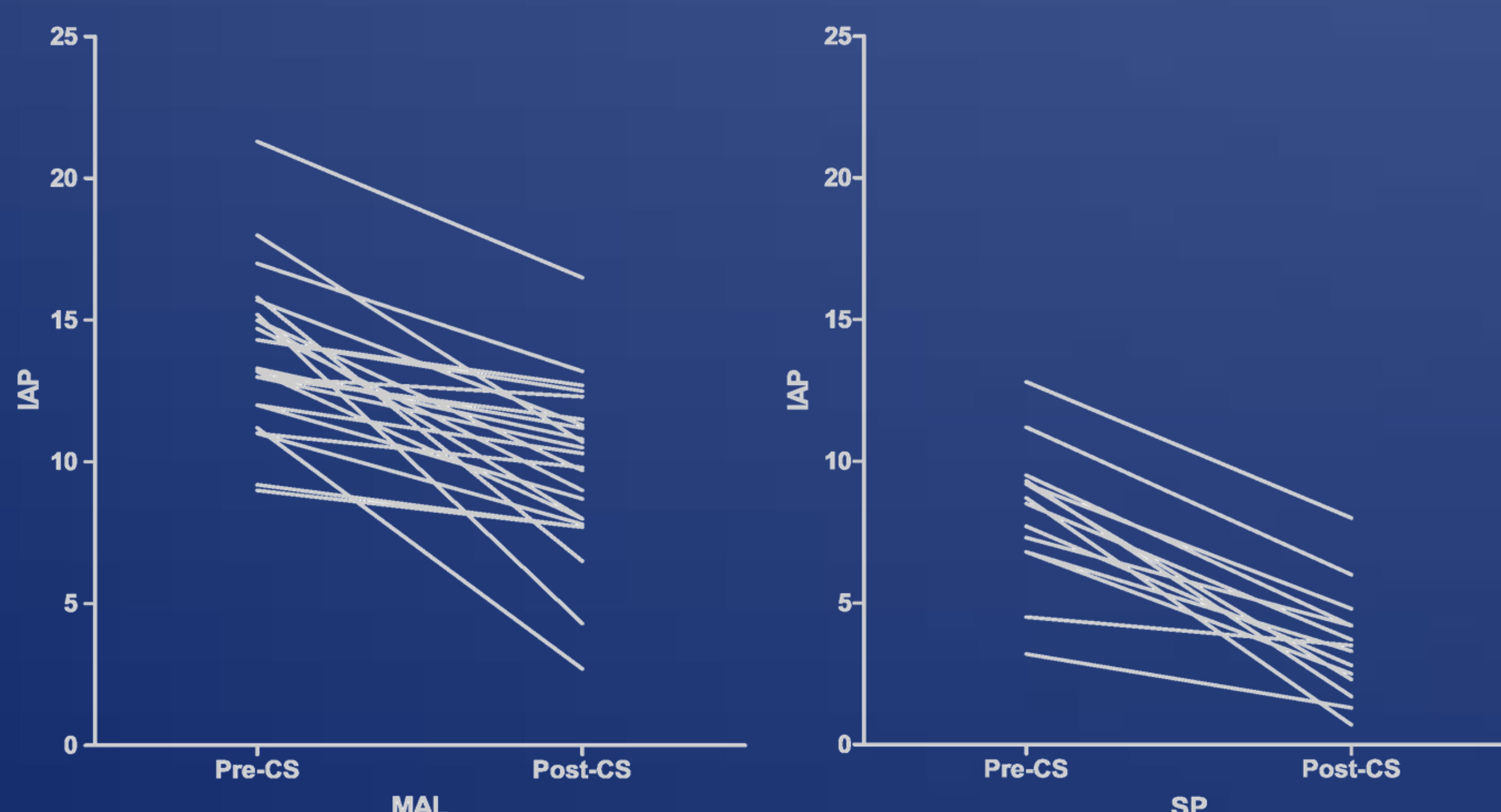
In all 24 subjects, IAP was measured using the midaxillary line (IAP_{MAL}). In a subset of 13 subjects, IAP_{MAL} as well as IAP_{SP} (symphysis pubis) was measured before and after surgery.

A paired two-sample t-test was used for statistical analysis at nominal level $\alpha=0.05$. Data are represented as mean \pm standard deviation (minimum; maximum). Statistical analyses were performed using the SPSS 20.0 package.

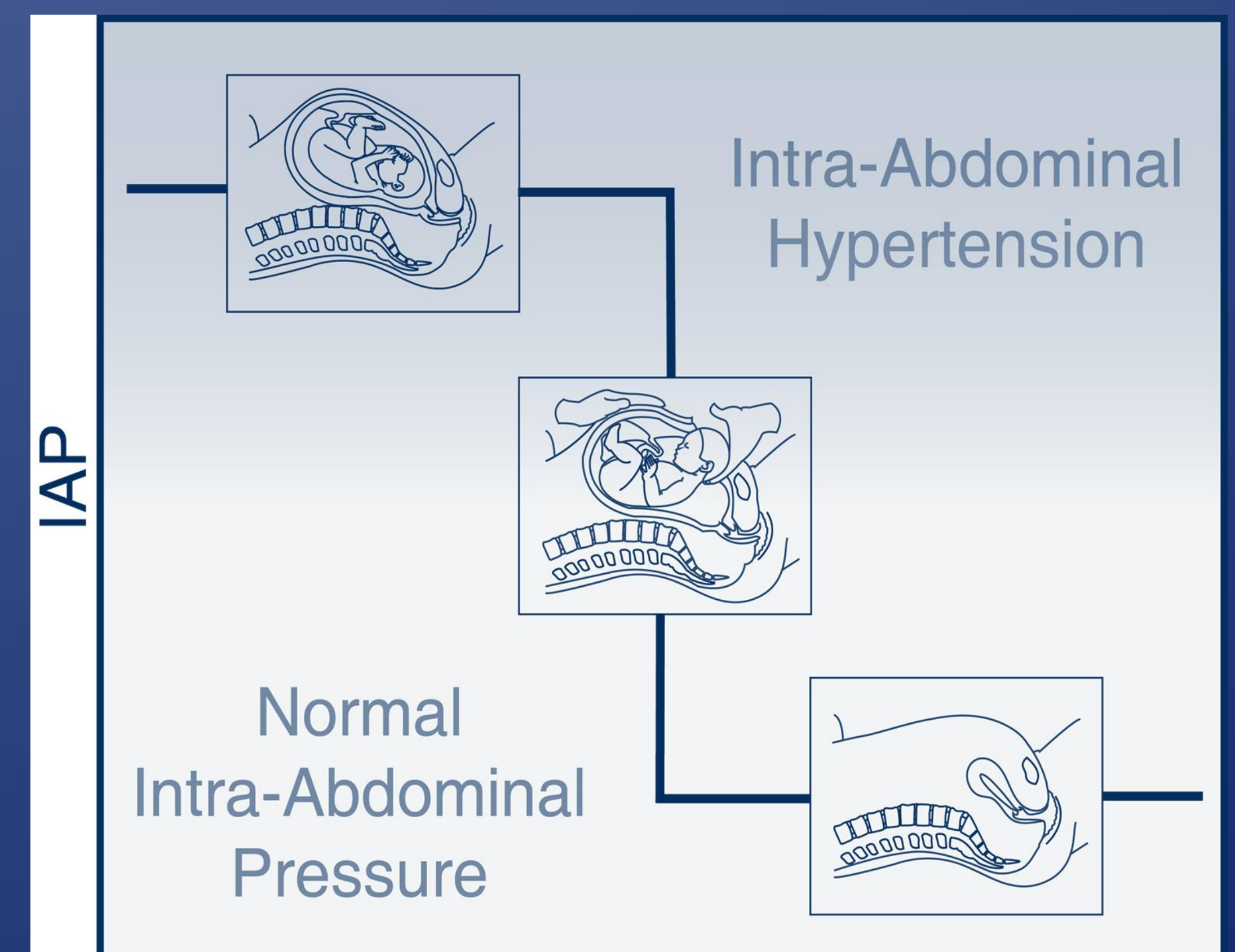
Results & Discussion

For all 24 subjects, the mean maternal age is 30 ± 4.2 year and the gestational age is 38.6 ± 1.7 weeks.

	N	Min	Mean	Max	Stdev
Pre CS					
IAP _{MAL} (mmHg)	24	9	13.7	21.3	2.7
IAP _{SP} (mmHg)	13	3.2	8.2	12.8	2.5
Post CS					
IAP _{MAL} (mmHg)	24	2.7	9.7	16.5	2.9
IAP _{SP} (mmHg)	13	0.7	3.5	8	1.9



For IAP_{MAL} before SC, there is a modest but significant positive correlation with birth weight ($r=0.41$; $p=0.030$), and for IAP_{SP} a negative correlation with breech presentation ($r=-0.54$; $p=0.048$).



There is a significant decline of IAP after delivery. Birth weight and fetal presentation influence the IAP in term pregnant women, which might explain partly the wide interindividual differences of IAP.

Pregnancy is a physiological state of high intra-abdominal pressure.