

BACKGROUND:

In the recent years the intrauterine administration of autologous peripheral blood mononuclear cells (PBMC) was proposed as an effective approach to improve embryo implantation in patients with repeated IVF failures. The isolated PBMC mainly consist of T lymphocytes, B lymphocytes, and monocytes. The Th-2 integral modulator IL-6 is known to favour the embryo implantation. However there is no exact information on the secreted levels of IL-6 from PBMC in the literature.

The aim of this study was to investigate whether PBMCs secrete IL-6 when cultured at physiological conditions (37°C) and to measure its concentrations after 2 hours of incubation.

MATERIALS AND METHODS:

Blood samples were obtained from 10 women patients of Nadezhda Women's Health Hospital. **Figure 1.**

For PBMC isolation, 9 ml of heparinised whole blood from each patient were processed by density gradient centrifugation using Pancoll (P04-60100, Pan-Biotech) for 25 minutes at 400g. The buffy coat of PBMCs were collected and washed with phosphate buffer saline and counted in Makler counting chamber. A total of 10×10^6 cells were cultured in 500µl StemLife™ basal medium (LS-1060, Lifeline Cell Technology) for 2 hours at 37°C.

Quantification of IL-6 in the PBMC medium was measured by sandwich enzyme-linked immunosorbent assay (ELISA) (E-EL-H0102, Elabscience) according to the manufacturers' instructions.

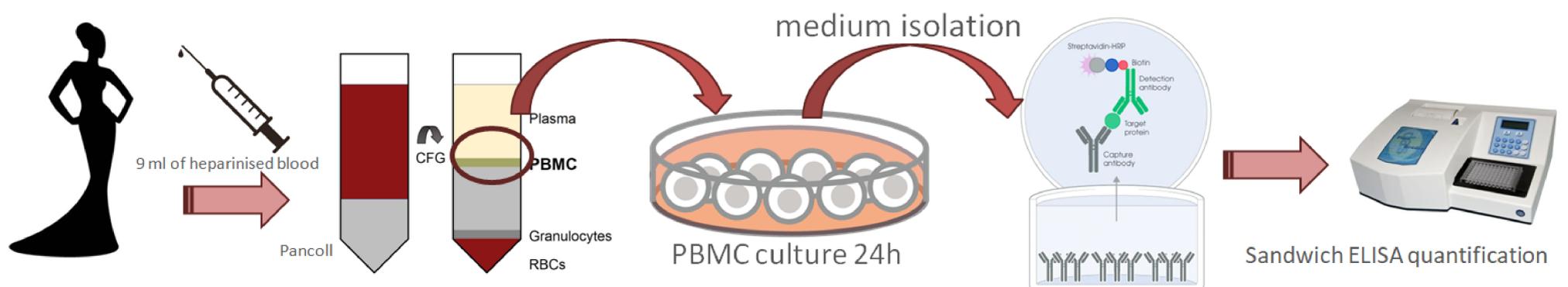


Figure 1: Experimental design

RESULTS:

No IL-6 was detected in the fresh LL media control. The presence of IL-6 was confirmed in all PBMC samples. The IL-6 concentrations in the PBMC culture media after 2 hours incubation varied between 4.71 pg/ml and 8.73 pg/ml with range of 4.02 pg/ml. The mean IL-6 secreted from the PBMCs was 7.14 pg/ml \pm 1.86 pg/ml SD.

Table 1, Figure 2.

Table 1: Descriptive statistics of the obtained results

	N	Range	Min	Max	Mean	SD
IL-6, pg/ml	10	4.02	4.71	8.73	7.14	1.86

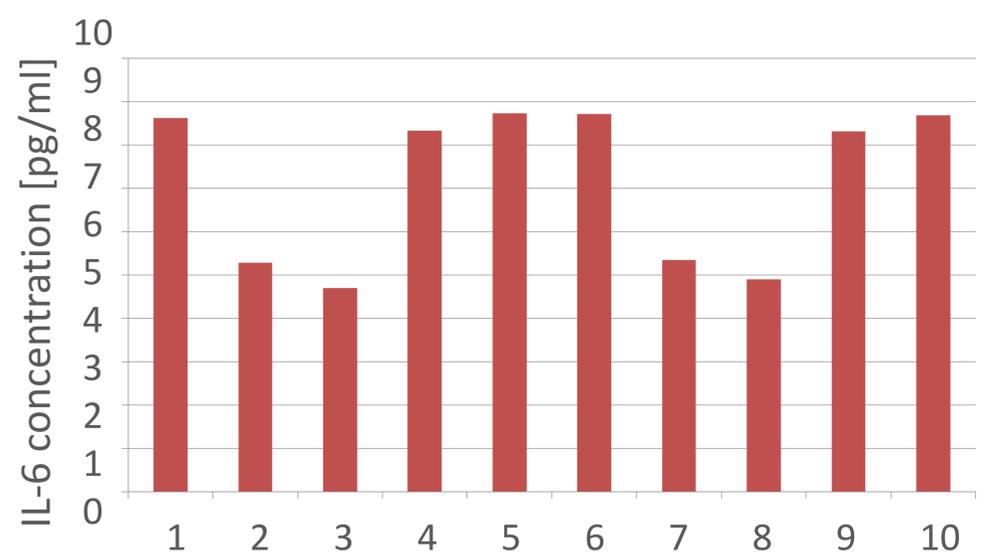


Figure 2: IL-6 concentrations in the PBMC medium samples

CONCLUSION:

PBMCs secrete IL-6 in detectable amounts in the culture media. Furthermore, the measured IL-6 concentrations could be used as an indicator for the functionality of the PBMC used for intrauterine applications.