15-20 超出生体重児に対するhANPの利尿効果における検討

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α型ヒト心房性ナトリウム利尿ペプチド(αhuman atrial nautriuretic peptide，以下hANP)は主に心房細胞に存在し，体液量及び循環調節に関与しているホルモンの一種である．今回我々は新生児期において，hANPの投与により乏尿の改善を得ることのできた5症例を経験したのでここに報告する．
22w0d～25w2d，出生体重484～826gまでの超低出生体重児であり，4例が出生後NECによる消化管穿孔にて開腹術施行，1例はPDAに対し結紮術施行した．
術後乏尿に対し，輸液・昇圧剤・利尿剤投与にかかわらず十分な利尿が得られなかった症例に対して，hANPの適応とした．インフォームド・コンセントを得た上で，0.1mg/kg/minより持続投与開始．hANP投与中・前後の経時的尿量変化，心拍数，血圧，血中hANP・AVP濃度，血中PH・電解質・BUN・Cre，尿中電解質を測定．
hANP投与前の尿量は0.2±0.3ml/kg/h，投与1日目0.9±0.8ml/kg/h (P=0.11)，投与2日目1.3±1.0ml/kg/h (P=0.06)，投与3日目1.7±0.1ml/kg/h (P=0.01)，投与4日目1.4±1.0ml/kg/h (P=0.05)，投与5日目1.6±1.3ml/kg/h (P=0.05)．投与3,4,5,日目に有為な尿量の増加を認めた．hANP投与中において心拍数，血圧，血中電解質，循環動態，中枢・末梢神経系，呼吸系において重大な副作用は認めなかった．
今回，出生後の経過中乏尿となった超低出生体重児5症例において，hANP投与により利尿の増大を認め，重大な副作用も認めなかった．今回の検討から，輸液負荷，利尿剤投与に対し全く反応しなくなった新生児の乏尿に対し，hANP投与は有用であることが示唆された．

15-21 Fetal and maternal plasma levels of circulating soluble vascular adhesion molecule-1 in normal and preeclamptic pregnancies

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Objective : Circulating levels of endothelial cell adhesion molecules are elevated in women with preeclampsia.The aim of the present study was to determine levels of soluble vascular cell adhesion molecule-1 in the fetal circulation of normal pregnancies and preclamptic pregnancies.
Study design : Maternal plasma from women with preeclampsia (n=26) and normal pregnant women (n=26) were collected.Fetal plasma of both groups were collected from the umbilical vein immediately after delivery (n=26 from normal pregnancy, n=26 from preeclamptic pregnancies). VCAM-1 was measured by enzyme linked immunosorbent assay.
Results : The mean maternal and cord VCAM-1 concentrations were 559±140.9ng/ml and 1189.3±192.2ng/ml.The mean umbilical VCAM-1 concentration was higher than maternal concentration (P<0.05). The mean concentrations of VCAM-1 in the preeclamptic maternal circulation and fetal circulation were 857.1±220.1ng/ml, 1217.9±195.2ng/ml (P<0.05). The concentrations of VCAM-1 was significantly elevated in women with preeclampsia compared to normal pregnant women (p<0.05). In contrast, there was no difference in the circulating fetal concentrations of VCAM-1 between normal pregnancies and pregnancies complicated by preeclampsia (p>0.05).
Conclusion : Plasma concentrations of VCAM-1 is elevated in women with preeclampsia but not in the fetal circulation of preeclamptic pregnancies.Unaltered concentrations of VCAM-1 in the fetal circulation suggest that the fetal circulation may not be affected by the factors that lead to disturbed endothelial cell function in women with preeclampsia.

15-22 Ex vivo generation of monocyte-derived dendritic cell from cord blood by culture with GM-CSF, IL-4,IFN-gamma and LPS

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We investigated the generation of dendritic cell derived from cord blood monocytes in the presence of GM-CSF, IL-4,IFN-gamma and LPS.Fresh cord blood mononuclear cells were separated by Ficoll density centrifugation and monocytes were isolated from cord blood mononuclear cells by the plastic adherence method.These adherent cells were cultured by two groups : 1) RPMI 1640 medium with 10%fetal bovine serum including 800U/ml GM-CSF,500U/ml IL-4 and 100U/ml TNF-alpha Group 1), 2)RPMI 1640 medium with 10%fetal bovine serum including 800U/ml GM-CSF,500U/ml IL-4,100U/ml IFN-gamma and 1ug/ml LPS (Group 2). Dendritic cells at day 6,8 were analyzed phenotypes, such as CD14,CD80,CD83,CD86, and IL-12 in culture media by ELISA assay.The expression of CD80 and CD86 were 69.68+18.26%, 90.12+7.45%in Group 1 with GM-CSF, IL-4 and TNF-alpha and 78.01+19.77%, 91.07+8.19%in Group 2 with GM-CSF, IL-4,IFN-gamma and LPS, respectively.However, it was not statistically significant between two groups.In the expression of CD83,Group 2 had significantly higher proportion than Group 1 : 68.01+11.99%vs.46.61+9.66 (p<0.032). Also IL-12 levels in culture condition with GM-CSF, IL-4,IFN-gamma and LPS, and with GM-CSF, IL-4 and TNF-alpha were 182.94+124.20pg/ml,2.45+1.68pg/ml, respectively (p<0.016). We concluded that functionally matured dendritic cells from cord blood monocytes could be generated in the presence of GM-CSF, IL-4,IFN-gamma and LPS.