

## Enumerasi sel punca pada janin yang mengalami hipoksia = Stem cell enumeration in hypoxic fetus

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### Abstrak

[<b>ABSTRAK</b><br>

Latar Belakang: Hipoksia diperkirakan dapat memicu terjadinya kerusakan jaringan akan terjadi pelepasan sinyal-sinyal yang dapat memobilisasi sel punca.

Hingga saat ini belum ada penelitian yang menilai pengaruh kondisi hipoksia

janin, yang dinilai dari pH dan APGAR skor, terhadap peningkatan jumlah sel punca darah tali pusat.

Tujuan: Diketuainya pengaruh kondisi hipoksia janin terhadap jumlah sel punca darah tali pusat. Metode: Penelitian ini adalah studi observasi dengan rancangan cross sectional, di IGD FKUI-RSCM tahun 2013-2014. Kelompok diteliti adalah janin yang mengalami hipoksia pada Ibu bersalin dengan hamil cukup bulan (37-40 minggu),

kehamilan tunggal hidup intra uterin, dengan kontrol janin yang tidak mengalami hipoksia. Dilakukan pengambilan darah tali pusat masing-masing Ibu pada kedua

kelompok, dengan cara semiclosed system. Kemudian dilakukan dua jenis proses, yaitu volume reduction dan red blood cells depletion. Pemeriksaan kandungan sel punca CD34+ dilakukan di Laboratorium Terpadu FKUI.

Hasil: Didapatkan 17 janin dengan hipoksia dan 17 janin tanpa hipoksia. Didapatkan perbedaan bermakna antara jumlah CD34 dengan hipoksia janin (31.77 sel/uL vs 13.65 sel/uL,  $p = 0.037$ ). Tidak didapatkan korelasi antara jumlah sel punca dengan derajat hipoksianya ( $p = 0.153$ ,  $r = -0.362$ ). Kesimpulan: Terdapat perbedaan yang bermakna antara jumlah sel punca janin yang mengalami hipoksia dengan janin yang tidak mengalami hipoksia.

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<b>ABSTRACT</b><br>

Background: Hypoxia was estimated to trigger tissue injury and release signals which could cause stem cells mobilization. There was still no other study about

relationship between fetal hypoxic condition and increasing number of umbilical cord's stem cells by counting pH and APGAR score. Aim: To find out the relationship between fetal hypoxic condition and umbilical cord's stem cells. Method: This was an observational study using cross sectional design. It was held at the Emergency Room of FMUI-RSCM between the year of 2013 and 2014. Studied group consist of hypoxic fetus in labour woman with aterm pregnancy (37-40 weeks), singleton-viable intrauterine pregnancy and not hypoxic fetal control. Umbilical cord blood collecting within both groups used the semiclosed system. And then we done the volume reduction and red blood cells depletion. The examination of CD34+ stem cell was held at Integrated Laboratory of FMUI. Result: We found 17 fetus with hypoxia and 17 others without hypoxia. There are

significant differences between CD34 with hypoxic fetus (31.77 cells/uL vs 13.65 cells/uL,  $p = 0.037$ ). There is no correlation between stem cells and hypoxic grading condition ( $p = 0.153$ ,  $r$

= -0.362). Conclusion: There is significant difference between the number of stem cells in hypoxic fetus and not hypoxic fetus.;Background: Hypoxia was estimated to trigger tissue injury and release signals which could cause stem cells mobilization. There was still no other study about relationship between fetal hypoxic condition and increasing number of umbilical cord's stem cells by counting pH and APGAR score. Aim: To find out the relationship between fetal hypoxic condition and umbilical cord's stem cells. Method: This was an observational study using cross sectional design. It was held at the Emergency Room of FMUI-RSCM between the year of 2013 and 2014. Studied group consist of hypoxic fetus in labour woman with aterm pregnancy (37-40 weeks), singleton-viable intrauterine pregnancy and not hypoxic fetal control. Umbilical cord blood collecting within both groups used the semiclosed system. And then we done the volume reduction and red blood cells depletion. The examination of CD34+ stem cell was held at Integrated Laboratory of FMUI. Result: We found 17 fetus with hypoxia and 17 others without hypoxia. There are significant differences between CD34 with hypoxic fetus (31.77 cells/uL vs 13.65 cells/uL,  $p = 0.037$ ). There is no correlation between stem cells and hypoxic grading condition ( $p = 0.153$ ,  $r = -0.362$ ). Conclusion: There is significant difference between the number of stem cells in hypoxic fetus and not hypoxic fetus., Background: Hypoxia was estimated to trigger tissue injury and release signals which could cause stem cells mobilization. There was still no other study about relationship between fetal hypoxic condition and increasing number of umbilical cord's stem cells by counting pH and APGAR score. Aim: To find out the relationship between fetal hypoxic condition and umbilical cord's stem cells. Method: This was an observational study using cross sectional design. It was held at the Emergency Room of FMUI-RSCM between the year of 2013 and 2014. Studied group consist of hypoxic fetus in labour woman with aterm pregnancy (37-40 weeks), singleton-viable intrauterine pregnancy and not hypoxic fetal control. Umbilical cord blood collecting within both groups used the semiclosed system. And then we done the volume reduction and red blood cells depletion. The examination of CD34+ stem cell was held at Integrated Laboratory of FMUI. Result: We found 17 fetus with hypoxia and 17 others without hypoxia. There are significant differences between CD34 with hypoxic fetus (31.77 cells/uL vs 13.65 cells/uL,  $p = 0.037$ ). There is no correlation between stem cells and hypoxic grading condition ( $p = 0.153$ ,  $r = -0.362$ ). Conclusion: There is significant difference between the number of stem cells in hypoxic fetus and not hypoxic fetus.]