Analisis proliferasi dan diferensiasi sel punca wharton's jelly tali pusat manusia dari persalinan preterm = Analysis of proliferation and diferentiation of wharton's jelly derived stem cells from preterm human umbilical cord / Ari Khusuma

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Abstrak

ABSTRAK
Sel punca mesenkimal SPM sangat menjanjikan untuk pengobatan penyakit degeneratif. Keterbatasan penggunaan sel punca dari jaringan embrionik dan dewasa menyebabkan peneliti mencari alternatif lain sumber sel punca, salah satunya wharton rsquo;s jelly tali pusat. Wharton rsquo;s jelly WJ dari persalinan aterm cukup bulan telah berhasil diisolasi dan didiferensiasikan, sedangkan WJ dari persalinan preterm kurang bulan belum banyak dilakukan. Penelitian ini bertujuan untuk melihat kemampuan WJ sebagai sumber sel punca dan membandingkan proliferasi dan diferensiasi WJ dari persalinan preterm dan aterm menggunakan medium kultur xenofree.Sel punca WJ dikultur dalam medium DMEM 10 FBS, DMEM 10 PRP dan Mesencult . Sel yang telah konfluens dipanen, dan ditumbuhkan kembali pada wadah yang baru pasase dengan medium yang sama. Pasase dilakukan hingga pasase ke 5 dan dilakukan uji diferensiasi pada pasase 3 dan 5. Jumlah sel antara WJ dari persalinan preterm dan aterm dianalisis menggunakan analisis statistik t-independent test. WJ preterm tumbuh dan bersifat plastic-adherent dan memiliki perbedaan yang tidak bermakna dalam proliferasi sel dengan jumlah populasi sel lebih besar dibandingkan WJ aterm. Sel punca WJ preterm dapat berdiferensiasi dan medium xenofree dapat digunakan untuk menggantikan FBS. WJ dari persalinan pretem dapat digunakan sebagai sumber sel punca mesenkimal.
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ABSTRACT
Mesenchymal stem cells are claimed as a promising degenerative medicine.
Due to limited use of stem cells derived from embryonic and adult tissues, researchers have to find alternative sources of stem cells, and one of them are Wharton 39 s Jelly umbilical cord. Wharton 39 s Jelly WJ derived from full term birth have been isolated and differentiated, but very few researches focus on the WJ derived from preterm birth. This study aimed to analyse the ability of WJ a source for the stem cells, and to compare the proliferation and differentiation of WJ derived stem cells from preterm and full term birth using xeno free culture media. WJ was cultured with the followings media DMEM 10 FBS, DMEM 10 PRP and Mesencult . Cells reaching confluence were har vested and pasage in different containers, but with the same media. Cell passaging was carried out until the fifth passage, and the differentiation tests were performed. Cell cumulative between WJ derived stem cells from pre term and full term birth were then analysed using t independent test. The preterm WJ grown in culture media were plastic adherent, had a non significant difference with WJ derived from full term birth, but had a higher number of cell populations than the latter. WJ were able to differentiate, and xeno free media can be used to replace FBS. WJ derived stem cells from preterm birth can be used as a source for mesenchymal stem cells.