Analisis Aktivitas Spesifik Dinein ATPase pada Laki-laki Infertil Astenozoospermia yang melalui Metode Pencucian = Analysis of Specific Activity of Dynein ATPase in Infertil Asthenozoospermia Men through Swim Up Washing Methods

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Abstrak

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Latar Belakang: Untuk meningkatkan kemungkinan konsepsi pada pasangan yang menjalani inseminasi intrauterin (IIU), dilakukan preparasi spematozoa dengan metode pencucian swim-up (SU) yang dapat meningkatkan kualitas spermatozoa. Aktivitas dari dinein ATPase dapat terlibat dalam proses preparasi spermatozoa, namun nilai yang pasti dari aktivitas dinein ATPase pada spermatozoa kelompok astenozoosperma yang menjalani pencucian SU belum diketahui. Tujuan: Studi ini dilakukan untuk melakukan evaluasi terhadap efisiensi dari metode preparasi spermatozoa dengan pencucian SU pada sampel astenozoospermia pada laki-laki infertil. Metode: Sampel semen didapatkan dari 6 laki-laki pasangan infertil (astenozoospermia) yang akan menjalani terapi inseminasi intrauterin. Analisis semen dilakukan sebelum dan sesudah dilakukannya preparasi spermatozoa. Preparasi spermatozoa dilakukan dengan metode swim-up (SU). Kemudian, aktivitas dinein ATPase diuji dengan metode Vivenes setelah fraksi aksonem sperma dikumpulkan dengan metode Olson. Dilakukan uji statistik paired t-test atau uji Wilcoxon Signed Rank untuk melihat derajat kemaknaan, dengan nilai bermakna jika p<0,05. Hasil: Berdasarkan analisis semen, ditemukan peningkatan signifikan terhadap motilitas dan morfologi progresif spermatozoa kelompok astenozoospermia setelah dilakukannya preparasi sperma dengan metode swim-up (p<0,05). Didapatkan pula peningkatan pada aktivitas spesifik dinein ATPase pasca-pencucian (p>0,05). Walaupun begitu, terdapat penurunan pada nilai konsentrasi sperma (p>0,05). Kesimpulan: Terdapat peningkatan kualitas spermatozoa kelompok astenozoospermia yang signifikan disertai peningkatan aktivitas spesifik dinein ATPase setelah pencucian dengan metode swim-up.
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<i>ABSTRACT
Background: To increase the likelihood of conception in couples undergoing intrauterine insemination (IIU), spematozoa preparation was carried out with a swim-up (SU) washing method that could improve the quality of spermatozoa. The activity of dinein ATPase can be involved in the preparation process of spermatozoa, but the exact value of dinein ATPase activity in the spermatozoa of the astenozoosperm group undergoing SU washing is unknown. Objective: This study was conducted to evaluate the efficiency of the spermatozoa preparation method by swim-up washing in the asthenozoospermia sample in infertile men. Methods: Semen samples were obtained from 6 men from infertile couples (asthenozoospermia) who would undergo intrauterine insemination therapy. Cement analysis was carried out before and after the preparation of spermatozoa. Preparation of spermatozoa is carried out by the Swim-up (SU) method. Then, the dinein ATPase activity was tested by the Vivenes method after the axoneme fraction of the sperm was collected by the Olson method. Paired t-test statistics or the Wilcoxon were conducted to see the degree of significance, with a significant value if p <0.05. Results: Based on semen analysis, it was found a significant increase in

the progressive motility and morphology of the asthenozoospermia spermatozoa after swim-up method of sperm preparation ($p < 0.05$). There was also an increase in post-washing dinein ATPase specific activity ($p > 0.05$). However, there was a decrease in the value of sperm concentration ($p > 0.05$). Discussion: There was an increase in the quality of the asthenozoospermia spermatozoa and significant specific dinein ATPase activity after spermatozoa preparation with swim-up method.<i/>