RINGKASAN

UJI BANDING MEDIUM KULTUR HTF DAN KSOM PADA FERTILISASI *IN VITRO* MENCIT *(Mus musculus)*

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Tak bisa dipungkiri bahwa bagi sebagian besar pasangan, kehadiran anak biologis menjadi dambaan yang tak ternilai harganya, itu sebabnya tatkala "Si buah hati" tidak kunjung hadir maka berbagai upaya dilakukan termasuk di dalamnya adalah dengan metode teknologi "Bayi Tabung" (*In vitro Fertilization - Embryo Transfer)*

Kultur embrio merupakan bagian terpenting dalam program Teknologi Reproduksi Bantuan *(Assisted Reproductive Technology),* untuk itu pemilihan medium kultur yang tepat saat melakukan Fertilisasi *In Vitro* sangat berpengaruh terhadap perkembangan embrio pre implantasi.

Penelitian ini bertujuan untuk mengetahui apakah medium kultur KSOM yang mempunyai kelebihan yaitu mengandung Asam Amino Essensial dan Asam Amino Non Essensial (ditemukan oleh Lewitts dkk, th 1991) lebih baik dari pada medium kultur HTF (ditemukan oleh Quinn dkk, th 1985)

Hasil penelitian menunjukkan bahwa :

1. Pada IVF yang menggunakan medium kultur HTF, dari 68 Oocyte, yang berkembang menjadi embrio 1 sel ada 66, untuk perkembangan selanjutnya yang menjadi embrio 2 sel ada 61, embrio 4 sel ada 41, embrio 8 sel ada 37 dan yang berkembang menjadi morula ada 34.
2. Pada IVF yang menggunakan medium kultur KSOM, dari 82 Oocyte, yang berkembang menjadi embrio 1 sel ada 79, untuk perkembangan selanjutnya yang menjadi embrio 2 sel ada 45, embrio 4 sel ada 23, embrio 8 sel ada 22 dan yang berkembang menjadi morula ada 22.

Kesimpulan : berdasarakan hasil "Trend Study Analisys" ternyata medium kultur HTF lebih baik dari pada medium kultur KSOM pada fertilisasi *In Vitro* mencit (Mus musculus).

Berdasarkan penelitian ini maka disarankan untuk melakukan penelitian lebih lanjut mengenai medium kultur HTF dan KSOM pada berbagai tahap perkembangan embrio, yaitu dengan cara sekuensial dimana pada tahap fertilisasi sampai dengan embrio 4 cell menggunakan medium kultur HTF, sedang mulai embrio 4 sel sampai tahap morula menggunakan medium kultur KSOM.

SUMMARY

Comparative Test of HTF and KSOM as Culture Media for *In Vitro Fertilization* in Mice (*Mus musculus*)

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It is undeniable that any married couple must have a high desire to have biological offspring. Presence of children is naturally very valuable. A couple, which find difficult in having offspring, may take any efforts to overcome the problem. One of those efforts is the *in vitro fertilization* embryo transfer.

Embryo culture is the most important part in Assisted Reproductive Technology program. Selection of appropriate culture media during the *in vitro fertilization* has therefore a high effect on the pre-implanted embryonal development.

This study was aimed to disclose whether medium culture KSOM, whose advantage was containing either essential and non-essential amino acid (Lewitts et al, 1991), was better than medium culture HTF (Quinn et al, 1985).

Result showed that : 1. In IVF using HTF as medium culture, from 68 oocytes, 66 developed to become 1-cell embryo. From these, 61 developed to become 2-cell embryo, 41 became 4-cell embryo, 37 became 8-cell embryo, and 34 became morula; 2. In IVF using KSOM ad medium culture, from 82 oocytes, 79 developed to become 1-cell embryo. From these, 45 developed to become 2-cell embryo, 23 became 4-cell embryo, 22 became 8-cell embryo and 22 became morula.

As a conclusion, if we use "Trend Analisys Study" so culture medium HTF is better than culture medium KSOM for *in vitro fertilization* in mice *(Mus musculus).* It is recommended to conduct further studies on the media culture HTF and KSOM in various enbryonal stages by squencial technik in which HTF should be used from fertilization to 4-cell stage, and KSOM from 4-cell embryonal stage to the formation of morula.

ABSTRACT

Comparative Test of HTF and KSOM as Culture Media for *In Vitro Fertilization* in Mice (*Mus musculus*)

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Even though culture media been available commercially, principles of culture media should be learned and developed in order to improve the results of conception.

This study was aimed to determine the best culture medium, whether HTF or KSOM, in producing early stage embryo (morula)

This study used CBR strain mice, superovulated with hormones PMSG and HCG. Oocytes were collected from ampullae in the fertilization pouch at the Fallopian tubes. Spermatozoa were collected from caudal epididymis. Collected oocyes and spermatozoa were kept in PBS medium. Oocytes collecting were assisted by the use of inverted microscope. IVF was done using incubator of 5 % CO2 at 37° C, and it was undertaken using culture media HTF and KSOM.

Result showed that : 1. In IVF using HTF as medium culture, from 68 oocytes, 34 developed to become morula (morula rate 50%). From 41 4-cell embryo, those that developed into 8-cell were 39 (95.12%), and from these, embryos that developed to become morula were 34 (87.88%); 2) In IVF using KSOM as media culture, from 82 oocytes, those that developed to become morula were 22 (morula rate 26.83%) and from 23-4 cell embryo, those that developed to become 8-cell were 22 (95.65%) and from these, embryos that developed to become morula were 22 (100%). Although culture medium KSOM seemed better than HTF in developing 4-cell embryo to become morula, the difference was not sifnificant ($p>0.05$).

Those results indicate that morula rate was not significantly different whether embryos were cultured in HTF or KSOM.($p>0.05$).

But if we use "Trend Analisys Study", so embryos were cultured in medium HTF better (33,70) than KSOM (17,49). ($p<0.01$).

Keywords : in vitro ferilization, medium culture HTF *and* KSOM, *embryo.*