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Lyophilization as a new method of preservation amniotic membrane – a pilot project.

Dias ABT, Lima Filho AAS, Lourenço ACS, Souza Filho JP, Gomes JAP, Haapalainen E, Martins MC Purpose: To investigate the lyophilization process as a new method for the preservation of amniotic membrane and to compare with the traditional freezing process. Methods: Six samples of amniotic membrane were submitted to lyophilization. The specimens were dehydrated in a Boc® equipment model Modulyotd. They were previously freeze-dried under a mixture of dry ice and isopropyl alcohol (in a temperature of -70°C). The time of lyophilization cycle was 24 hours. The control-group of 3 samples was submitted to conventional freezing method. The samples were evaluated by hispathologic study, impression cytology technique and electron microscopy. Results: All the 3 methods of evaluation showed no structural differences between the lyophilised samples and the control-group. Conclusion. The lyophilization process could be used to provide samples that don't need refrigeration, with longer expiration dates and easier delivery. Lyophilised samples can be stored without refrigeration during almost three years, a great advantage over conventional freezing method that keeps the samples only for six months.