Placenta tissue processing protocol - in the context of placentophagy

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Abstract

Traditional pharmacopeia describe the use of ground and dehydrated human placenta tissue for the use as a remedy according complex integrative medicine systems such as Chinese medicine. To resemble the most common method of placenta preparation in a home-based environment, this protocol was established for placenta tissue processing under clean but not sterile conditions.

Introduction

In a clinical setting, written informed consent should be obtained from all women who donated their placenta for scientific research.

Depending on the research question, clinical parameters (pregnancy pathologies, maternal/fetal infection, drug administration during birth, birth mode, interventions etc.) should be obtained.

This protocol was established with the help of a placenta encapsulation specialist to integrate outpatient tissue processing standards into a clinical/laboratory setting.

It is further designed to compare the effects of three different preparation methods (raw/steamed/dehydrated) to the tissue from one placenta.

Following the preparation method of Chinese medicine, herbs (ginger, lemon and hot pepper) are added to the water during the steaming process. To avoid variations in the preparation process in our experiments (e.g. different concentrations of volatile oils in fresh ginger), boiling water without added herbs was used for steaming.

Reagents

Equipment

- eSwab containing Amies transport medium (Copan, Brescia, Italy)

- disinfectant wipes Incidin™ OxyWipe S (Ecolab, Monheim am Rhein, Germany)

- food processor (Moulinex DP800G, Frankfurt am Main, Germany)

- food dehydrator (Stöckli Dörrgerät, Netstal, Switzerland)

- steamer pot with water

- stainless steal scissors/tweezers/scalpel

Procedure

- Measure weight/height/diameter of the placenta.

- Exsize 5-10 g of placenta tissue for measuring the dry weight (dehydrated this piece at 100 °C for 8h)

- Wash the placenta under cold running tab water

- Remove the umbilical cord

- Cut the placenta into three equal pieces

- Wrap the piece for steaming into the amnion

Raw:

- Homogenize one-third of the placenta for analysis of raw tissue using the meat processor

Steaming:

- Bring water in the steamer pot to a boil

- Put the piece of placenta for steaming (on aluminum foil) into the steamer pot

- Steam for at least 10 minutes, check core temperature (the core temperature must reach 70 °C)

- Continue steaming for another 5 minutes if the core temperature has not yet reached 70 °C

- Press the steamed piece of placenta after reaching the core temperature of 70 °C with a fork to see that the fluid coming out is clear: if not, resume steaming for another 5 minutes

- After finishing the steaming process, take the steamed piece out of the pot and let it cool on a clean metal plate

Dehydration:

- Cut the pieces of placenta tissue (either raw or steamed) into 0.5 cm thin slices

- Place the slices on a baking foil in the dehydrator tray, make sure they do not overlap

- Start dehydration (8 hours at 55 °C)

- Do the "snap test" after dehydration - if the tissue lost all its water content it will snap easily

- Continue dehydration for another hour if the tissue is not snap dry

The equipment is cleaned after each preparation process with the Lab washing machine at 70 °C.

Wearing gloves (non sterile) is necessary at every preparation step.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Protokoll.pdf