Twenty-nine eye banks completed the survey, including 4 located outside Europe. 70% reported a guttae-related discard rate of ≤4. The types of microscope used for the evaluation, the geographical location and the number of guttae permitted do not seem to influence the discard rates. 13 eye banks permitted 0 guttae while 10 banks accepted between 1-10 guttae.

The 16 eye banks that responded 'no' to the question whether the contralateral cornea of a guttae-cornea was automatically discarded did report a lower guttae-related discard rate than the other eye banks.

Conclusion The high variability of the discard rate due to guttae in donor corneas (ranging from <1% and >12%) is an indication that it is not always easy to detect guttae in donor corneas. Although transplanting corneal grafts with guttae does not necessarily mean that a re-transplantation will be needed on the short term, a vital method to unequivocally determine the presence of guttae in the eye bank seems essential to prevent unnecessary waste of suspect tissue and unnecessary re-surgeries.

P08-A131 COMPARISON OF STERILE DONOR TOMOGRAPHY IN THE EYE BANK AND PREVIOUS KERATOMETRIC MEASUREMENTS DURING THE DONOR'S LIFETIME

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10.1136/bmjophth-2023-EEBA.8

Purpose Sterile donor tomography in the eye bank can be used to minimise refractive surprises after corneal transplantation.

The aim of this study was to compare sterile tomography of donor corneas in the eye bank with keratometric measurements of the same donors performed prior their death.

Methods Since 2018, 1246 donor sclerocorneal discs have been routinely measured using donor tomography, taken sterilely through their cell culture flask in medium II using the anterior segment optical coherence tomograph Casia 2 (Tomey Corp., Nagoya, Japan) and a custom-made Matlab software (The MathWorks Inc., Natick, Massachusetts, USA). Of all these donor corneas, 19 (1.5%) appeared to have been measured with Pentacam (Oculus Optikgeräte GmbH, Wetzlar, Germany) in the donors before death. Both measurements, taken at a mean interval of 35 ± 26 months, were compared using a Wilcoxon signed-rank test.

Results The mean steepest/flattest front surface radius and anterior astigmatism of the corneas measured with Pentacam amounted 7.66±0.35/7.93±0.37 mm, and 0.27±0.43 mm. Corresponding values of sterile donor tomography were respectively 7.48±0.31 [p<0.01]/7.77±0.25 [p=0.01] mm, and 0.29±0.35 [p=0.78] mm.

At the posterior corneal surface, the Pentacam measured a mean steepest/flattest surface radius and astigmatism of 6.27 ±0.33/6.72±0.48 mm and 0.45±0.47 mm, whereas values of sterile donor tomography amounted 6.55±0.30 [p<0.01]/6.94 ±0.33 [p=0.04] mm and 0.39±0.26 [p=0.63] mm, respectively.

The central corneal thickness amounted 575±52 µm with Pentacam, and 597±80 µm [p=0.20] with sterile donor tomography.

Conclusion The front and back surface astigmatism as well as the central corneal thickness remained statistically unchanged after corneal excision and preservation in organ culture in comparison to measurement of the donor prior death. The statistically non-similar anterior and posterior radius of curvature between both methods must be seen in light of the known differing corneal topography between swept-source anterior segment optical coherence tomography and Scheimpflug imaging. These results suggest a merely minimal deformation caused by the storage and attachment of donor corneas to their holder in the cell culture flask for sterile donor tomography, causing a steeper anterior surface curvature but leaving the astigmatism still congruent with previous in situ conditions.

P09-A130 MANAGEMENT OF AN EYE BANK WITH ORGAN-CULTURED AND HYPOTHERMIC CORNEAS: MICROBIOLOGY IN ENDOTHELIAL GRAFTS

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10.1136/bmjophth-2023-EEBA.9

Purpose To analyse the microbiologic control results taken during the processing of hypothermic and cultured corneas for endothelial transplants comparing the two groups from January to September 2022.

METHODS The microbiological controls of hypothermic corneas prepared for DSAEK or DMEK are: Transport Eusol control (pre-manipulation) and new Eusol control (post-manipulation). In cultured corneas the number of controls is increased to 4: first culture medium, evaluation culture medium, transport medium 24 hours post-evaluation and transport medium post-manipulation.

RESULTS A total of 1438 corneas were processed for transplant during the 9 months studied (321 fresh corneas and 1113 cultured corneas). A total of 557 corneas were prepared for DSAEK or DMEK, from which 89 (15,98%) were hypothermic corneas and 468 (84.O2%) were cultured. From hypothermic corneas, 65 were cut for DSAEK and with 24 corneas, pre-stripping for DMEK was done. In the case of cultured corneas, 187 were cut for DSAEK and with 281 pre-stripping for DMEK was done. The number of corneas with positive results in the microbiological controls were 15 (16,85%) in the case of fresh corneas (in 7 corneas that were prepared for DSAEK and in 8 for DMEK) and 4 cases (0,85%) in cultured corneas (in 3 corneas for DSAEK and in 1 corneas for DMEK) resulting in a clear difference between both preservation methods. Bio-surveillance notifications notified during the studied period have been a total of 5, from which 2 were SAE in hypothermic corneas and other 2 were SAE and 1 SAR, in cultured corneas, all for endothelial transplantations.

Conclusion The number of positive results for microorganisms was higher in the case of hypothermic corneas and the Bio-surveillance notifications were also a little bit higher in hypothermic corneas (2,25%) comparing to organ cultured corneas (0.64%). The management of an eye bank with both preservation systems is challenging with its advantages and disadvantages. The main disadvantage of hypothermic corneas is the risk of not detecting contaminations because the corneas are released without any definitive results but it is compensated by the fact that they allow us to respond to emergencies, tissue returns, apart from the economic aspect.

P10-A128 TRENDING OF CONTAMINATION RATES ACROSS NHSBT EYE BANKS

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10.1136/bmjophth-2023-EEBA.10

Introduction NHS Blood and Transplant Tissue and Eye Services (TES) is a human multi-tissue, tissue bank supplying tissue for transplant to surgeons throughout the UK. NHSBT has two Eye Banks.

NHSBT investigated all our corneas discard due to contamination with the aim to review for any patterns. NHSBT Eye Banks performs initial Microbiology sampling on all Corneas in Corneas in Organ Culture Media at 7 Days. Corneas undergo a 2nd Microbiology sampling the day after the cornea is transferred into dextran median.

Materials and methods Any Microbiology positive media Identified pre-transplant are sent to NHSBT's Microbiology Reference Laboratory (MSL) for Identification. Any organisms which are identified post-dispatch are sent to a Referral Laboratory for rapid Identification and Sensitivity/Specificity Testing.

Filton Eye Bank Contaminated Corneas in Organ Media: 2018- 28 (0.91%) 2019 -45 (1.10%), 2020- 27 (1.03%), 2021- 39 (1.41%), 2022- 43 (2.1%) (until 15/08/22)

Most common Identified Organisms: C.Ablicans C. glabrata C.paraphilotis

Contaminated In Dextran Pre-Transplant: 2018- 4 (0.17%) 2019 -6 (0.18%), 2020- 9 (0.46%), 2021- 0 (0%), 2022- 3 (0.3%) (until 15/08/22). Most common Identified Organisms: Bacillus species

Contaminated in Dextran Post Transplant: 2018- 0 (0%) 2019 -8 (0.23%), 2020- 2(0.10%), 2021- 2 (0.08%), 2022- 1 (0.11%) (until 15/08/22). Most common Identified Organisms: Bacillus species

David Lucas Eye Bank: Contaminated Corneas in Organ Media: 2020- 20(1.8%), 2021- 37(1.96%), 2022- 21(1.4%) (until 15/08/22). Most common Identified Organisms: C.Ablicans C. glabrata C.Kefyr

Contaminated In Dextran Pre-Transplant: 2020- 6(0.8%), 2021- 2(0.14%), 2022- 1(0.08%) (until 15/08/22). Most common Identified Organisms: Bacillus species

Contaminated in Dextran Post Transplant: 2020- 2 (0.26%), 2021- 1 (0.07%), 2022- 2 (0.16%) (until 15/08/22). Most common Identified Organisms: Bacillus species

Discussion Processes and facilities are of same standard between the two NHSBT Eye Banks and contamination rates are comparable. contamination is only identified in Approx1% of corneas processed. Corneas where growth is identified in Dextran is less than 1% of corneas Issued. Of the positive Microbiology samples identified post-Transplant, were mostly identified as Environmental Bacteria and had no patient impact on patient and assumed to have been contaminated by the operator.

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P12-A107 PORCINE CORNEA EX VIVO MODEL AS AN ALTERNATIVE TO HUMAN DONOR TISSUES FOR INVESTIGATING NEW PRESERVATION CONDITIONS

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10.1136/bmjophth-2023-EEBA.11

Purpose Considering the growing shortage of corneal tissues for research, the present study aimed to develop and optimize a porcine cornea model with qualitative features comparable to those of human tissues.

Methods A new decontamination procedure of porcine eye bulbs was set up and its efficacy as well as endothelial mortality were evaluated. Human corneas unsuitable for transplant and porcine corneas were then compared after storage under hypothermic (4–8°C, Eusol-C, AL.CHI.MI.A. S.R.L) or organ-culture (31–35°C, Tissue-C, AL.CHI.MI.A. S.R.L) storage conditions for 14 days. A new method, based on the semi-automatic analysis of Trypan-blue stained endothelial areas by Fiji software, was developed to quantify the whole endothelium viability. Corneas were assessed for central corneal thickness (CCT), corneal transparency, endothelial morphology, and endothelial cell density (ECD) at days 0, 7, and 14 of storage. Portions of lamellar tissues consisting of Descemet's membrane and endothelial cells were prepared for histological investigations.

Results The new decontamination procedure of porcine eye bulbs resulted in 18% versus 89% ('no decontamination' control) of corneas still contaminated after 28 days of storage at 31°C. The decontamination protocol did not affect endothelium viability, as assessed by the new Fiji-based method. ECD (porcine: 3156 ± 144 cells/mm2; human: 2287 ± 152 cells/mm2), CCT (porcine: 1073 ± 151 µm; human: 581 ± 39 µm), transparency (porcine: 88.6 ± 11.0%; human: 76.3 ± 5.4%), and morphology score (porcine: 4.0 ± 0.0; human: 3.2 ± 0.4) measured in the porcine cornea at day 0 were significantly higher than in human corneas. Nonetheless, the qualitative parameters of porcine and human corneas showed comparable trends during the storage under hypothermic (4–8°C) and organ-culture (31–35°C) conditions for 14 days.

Conclusion The presented porcine cornea model represents a reliable and alternative model to human donor tissues for