

THE STRATEGY OF DELAYED DBD EXPANDS ORGAN DONATION OPPORTUNITIES; A SINGLE CENTER EXPERIENCE.

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Background

In Belgium, there has been a gradual increase in donation after circulatory death (DCD) and a decline in donation after brain death (DBD). Identification of potential organ donors with devastating and irreversible brain damage starts when curative treatments are considered futile. Unlike DCD, DBD involves progression towards brain death. Prematurely ending life-sustaining therapy before brain death sets in may negatively impact its incidence. This report shares our experience with delayed DBD, a standard practice continuing intensive care -with exception of neuro-reanimation measures- beyond futility if no evolution towards brain death occurs within 24hrs. We compared effective organ donation among 'standard' DBD, delayed DBD and DCD.

Methods

In this single-center study, we retrospectively analyzed all referred potential/effective donors, according to the deceased donor pathway ('standard' DBD, delayed DBD, or DCD). We compared indications for ICU admission, duration between futility of care and brain death, and the number of transplanted organs from 'standard' DBD, delayed DBD and DCD, including organs from >75yo and the number of hearts transplanted.

Results

Out of 416 potential donors referred, 222 (53%) became effective donors: 133 (60%) DBD and 89 (40%) DCD donors. (Figure 1) Within the 133 DBD donors, 92 (69%) were 'standard' and 41 (31%) delayed DBD. The main indication for ICU admission was hemorrhagic stroke in standard/delayed DBD versus post-anoxic brain damage in DCD. (Figure 2) Mean time between establishing futility of care and brain death was 12hrs 35min in 'standard' DBD versus 42hrs 35min in delayed DBD. A total of 545 organs were procured: 233 organs from 92 'standard' DBD donors (2.53 organs/donor), 105 from 41 delayed DBD donors (2.56 organs/donor) and 207 from 89 DCD donors (2.33 organs/donor). Additionally, this resulted in 15 effective donors from delayed DBD, who most likely would otherwise have been discarded as DCD because of advanced age, and 9 additional heart donations.

Conclusion

Implementing delayed DBD not only increased the number of effective donors and organ yield per donor, but also facilitated additional heart transplants compared to DCD. Consistently adopting delayed DBD has the potential to substantially increase organ donation possibilities.