5.013 Prosthesis Prescription Consensus for Case Patients with Transfemoral Bone-Anchored Limbs

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BACKGROUND
Prosthesis osseointegration is an emerging surgical technique that provides direct femoral prosthesis attachment to create a bone-anchored limb (BAL). As the interfaces between the residual thigh and prosthesis differ between socket prostheses and BALs, prosthetic componentry needs also differ. However, there are no clinical practice guidelines (CPGs) for prosthetic component selection specific to transfemoral BALs due to insufficient scientific evidence. As clinical trials have yet to provide sufficient evidence to create CPGs, a first step to support clinicians is obtaining expert consensus.

AIM
We established international consensus amongst 18 worldwide experts for the prescription of prosthetic components for patients with transfemoral BALs.

METHOD
We conducted a three-round Delphi method to establish consensus amongst 18 experts on transfemoral BALs. During the first survey round, Delegates were presented descriptions of 18 case patients and asked to describe their recommended prosthesis prescriptions. From these responses, two evaluators synthesized 20 thematic statements regarding prosthesis prescription recommendations to provide case patients with the best possible prosthetic outcomes. Across two subsequent surveys, Delegates indicated their level of agreement with the thematic statements and their rationale. Consensus was defined as at least 80% Delegate agreement.

RESULTS
Over the course of the 3 surveys, 14 of the 20 thematic statements pertaining to prescription recommendations for case patient examples with transfemoral BALs achieved expert consensus. General recommendations for prosthetic prescription included (1) a microprocessor or hydraulic knee, (2) positional rotator (3) torque absorber, (4) carbon fiber or fiberglass foot with a split toe, and (5) the appropriate connector for the screw-fit or press-fit implant. There was also strong agreement that torsion absorption should be prioritized over shock absorption if build height is a limiting factor, and more general agreement that prescription recommendations should not differ based on sex, gender, age, contralateral amputation, or the use of a press-fit or a screw-fit osseointegrated implant.

DISCUSSION AND CONCLUSION
Most Delegate consensus aligns with current CPGs for transfemoral socket prostheses. However, some findings illuminate areas of uncertainty amongst experts, such as recommended changes for patients with lower activity levels or without local access to prosthetic care. Given increasing interest in BALs, this consensus is crucial to summarize the current state of expert opinion based on Delegates' extensive experience, providing a basis for developing clinical trials and clinical practice guidelines.

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