

OARSI FDA OA INITIATIVE

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FDA OARSI Device Committee

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Background

- ◆ Total Joint Replacement highly successful
 - Hip & Knee cost-effective
 - Other joints are improving
- ◆ Spinal OA—significant socioeconomical issues
 - New technologies emerging
- ◆ Hyaluronans and Biologicals considered devices but should be separated

Background

- ◆ Most devices (TJR) progress through 510(k) (Pre-1976)
 - Less costly, efficient
- ◆ If device makes new claim, long process
- ◆ Post-market surveillance (PMS) rarely required although recently SRA of hip has PMS requirement

Questions

1. *How to measure efficacy with a device, is it the same as pharmacologic treatment or should it be different measures?*

- ◆ Differ from pharmacologic
 - Time course for efficacy longer
 - Goal is long term pain relief; ↑ function
 - Two year timeframe arbitrary[Journals set]
 - Efficacy of implant and failure requires PMS

HA Based Viscosupplements

- ◆ Require clinical safety/effectiveness
- ◆ Differ from pharmacologicals
 - Local, sustained effect
- ◆ Metrics—joint specific
 - WOMAC specific for knee as an example

2. How to determine relative benefit; what is acceptable control arm for such studies?

- ◆ Specific controls required
 - Class II devices (510K)
- ◆ New technology will require active controls
- ◆ Use of standards will establish risks vs benefits
- ◆ All devices have risk, but may differ depending on patient

HA-based supplements

- ◆ Active controls; comparators
 - Sham or I.A saline/steroid
- ◆ Head to head should be considered

3. What are the optimal outcome parameters for evaluation?

- ◆ Pain relief; restoration of function (ROM, 6 min walk); separate reporting should be considered
- ◆ Mobility
- ◆ Radiographs
- ◆ Complications
- ◆ Revision rates

◆ Patient directed self-assessment critical

- WOMAC
- SF-36
- Virtual TJR outcome

◆ Physician derived

- HHS
- KSS

HA-based Viscosupplements

- ◆ Pain, function improved in single target joint
 - VAS
 - WOMAC A-1 scales
 - OARSI-OMERACT responder index
- ◆ Structural Modification if claimed
- ◆ Biological devices
 - May need structural outcome measure; e.g. MRI, Biomarkers

4. Are the parameters substantially different with respect to different joints under study?

- ◆ Similar outcomes across all joints
 - But there are specific metrics for each joint; i.e. shoulder, etc.

HA-based Viscosupplements

- ◆ General concepts same for all joints
 - Specific tools may be indicated for a single joint.
 - ◆ WOMAC A
 - ◆ PTGA
 - ◆ KOOS

5. How should short term vs. long term benefits be balanced in the assessment?

- ◆ Devices goal of long-term success
- ◆ Short-term = complications
- ◆ Two-year reasonable
- ◆ HA & Biologics: 6 months reasonable but structural modification longer ?
 - PMS critical

6. How should complications and other adverse events and their prevention be assessed?

- ◆ Prevention is key
- ◆ Post market surveillance
- ◆ Separate device complications from surgical/patient issues
- ◆ HA/biologicals: PMS with standard criteria important

7. What are the clinical indications?

- ◆ Well documented
 - Functional loss
 - Pain
- ◆ Failure of non-operative treatment

HA & Biologicals

◆ HA

- Failure of non-pharm. prescriptions and analgesics

◆ Biological

- No well documented indications

8. How should cost factors associated with device be balanced against conservative therapy?

- ◆ Requires quality of life estimates
- ◆ Care giver relationships important
- ◆ Requires long-term follow-up
- ◆ Subjective: pt/physician relationship
- ◆ How much risk patient wants to accept vs. long-term benefits
- ◆ Biologicals unknown

HA

- ◆ Requires more long-term studies; however may be relatively safe compared to systemic treatments

9. What is the research agenda required to inform each of the above questions?

- ◆ Meta-analyses of outcome
 - Primary
 - Revisions
- ◆ Outcome metrics—consensus
- ◆ Metric standards
- ◆ National registry with well defined goals
- ◆ Device failure modes

HA-Viscosupplements

- ◆ Meta-analyses of RCT
- ◆ Define responder ;long term outcome
- ◆ Metric standardization issues
- ◆ Define placebo or comparator
- ◆ Injection volume/numbers;repeat treatments
- ◆ Residence time issues

Conclusion

- ◆ Ordered sequential approach to “device” introduction critical
- ◆ National registries may be helpful
- ◆ Data discussion and sharing among all stakeholders critical