

MODULE OVERVIEW

Module 4: Cosmetic PRP Injections (2-day) consists of didactic & live patient hands-on training and examinations. This certification course is delivered in a small class size and high instructor-to-trainee ratio to provide comprehensive knowledge, clinical competency and the advanced use of PRP injections for aesthetic enhancement. The pre-requisite for Module 4 is Module 1: Advanced Facial & Neck Anatomy.

INTRODUCTION OF COSMETIC PRP SKIN INJECTIONS

1. History & definition of PRP
2. Biochemistry of platelets
3. Mechanism of PRP for cutaneous indications
 - a) Review of coagulation cascade
 - b) Platelet derived growth factors
 - c) Physiological effects of PRP
4. Common skin indications of PRP injections
 - a) As main treatment modality
 - b) As adjunctive/complementary treatment modality
5. Review of literature on PRP skin injections
6. Review of sweat gland anatomy and physiology

BRAND NAME OF COMMON PRP KITS & PRP PREPARATION USING SPECIALIZED KITS

1. Y-Cell Bio PRP Kit
 - a) Review of kit specific preparation technique
 - b) PRP yield & average platelet concentration
 - c) Pros & Cons
 - d) Cost vs. Performance analysis
 - e) Live demonstration of PRP production using Y-Cell Bio PRP kits
 - f) Hands-on practice by trainees
2. Harvest Technology PRP Kit
 - a) Review of kit specific preparation technique
 - b) PRP yield & average platelet concentration
 - c) Pros & Cons
 - d) Cost vs. Performance analysis
3. Regen PRP Kit
 - a) Review of kit specific preparation technique
 - b) PRP yield & average platelet concentration
 - c) Pros & Cons
 - d) Cost vs. Performance analysis
4. Selphyl PRP/PRFM Kit
 - a) Review of kit specific preparation technique
 - b) PRP yield & average platelet concentration
 - c) Pros & Cons
 - d) Cost vs. Performance analysis

MANUAL PRP PREPARATION WITHOUT SPECIALIZED PRP KITS

1. BD Glass Vacutainer with sodium citrate method
 - a) Required materials
 - b) Review of kit specific preparation technique
 - c) PRP yield & average platelet concentration
 - d) Pros & Cons
 - e) Cost vs. Performance analysis

2. BD Plastic Vacutainer with no anti-coagulant method
 - a) Required materials
 - b) Review of kit specific preparation technique
 - c) PRP yield & average platelet concentration
 - d) Pros & Cons
 - e) Cost vs. Performance analysis
3. Syringe-Luer-Syringe Extraction Method
 - a) Required materials
 - b) Review of kit specific preparation technique
 - c) PRP yield & average platelet concentration
 - d) Pros & Cons
 - e) Cost vs. Performance analysis

HOW TO PRODUCT PPP (PLATELET-POOR-PLASMA) INJECTABLE FILLER

1. Required materials
2. Review of specific preparation technique
3. Indications
4. Pros & Cons
5. Live demonstration

PRE-INJECTION PREPARATION & CONSIDERATION

1. Local anesthesia
 - a) Intravascular injection & extravascular compression
 - i. Dosage, toxicity, epinephrine
 - ii. Complications of peripheral nerve anesthesia
 - iii. Allergic reaction
 - iv. Local toxicity
 - v. Systemic toxicity
 - vi. Complications & treatment scenarios
 - vii. Patient preparation
 - viii. Infiltration techniques
 - b) Topical (EMLA 5% & Lidocaine 5% gels & BLT)
 - i. Dosage, incubation time, penetration depth
 - ii. Application area & systemic toxicity
 - iii. Allergic reaction
 - iv. Irritant reaction, alkaline burn, acid burn
 - c) Cryo-spray or icepack
2. Peripheral nerve block
 - a) Supraorbital, supratrochlear
 - b) Zygomaticotemporal nerves, auriculotemporal
 - c) Infraorbital
 - d) Mental, buccal
 - e) Superficial transverse cervical, greater auricular nerves
 - f) Greater, lesser, and 3rd occipital nerves
3. Patient specific considerations
 - a) Existing conditions: bleeding diathesis, poor healing, vasculopathy, malnutrition, diabetes, keloid/hypertrophic tendency, cutaneous viral dermatosis, history of severe allergic reactions, active local skin infection, active local skin inflammation
 - b) Facial implants: rhinoplasty, mentoplasty, other injectable implants
 - c) Patient preparation: aseptic skin preparation, patient positioning
 - d) Pre-injection anxiety management strategies

PROCEDURAL CONSIDERATION

1. Treatment area specific considerations
 - a) Volume of existing soft tissue
 - b) Blood supply and vascular network
 - c) Skin thickness and elasticity
 - d) Anatomy of subcutaneous fat, SMAS, ligaments, tendons, muscles
2. Selection of PRP injection depth and injection techniques for desired effect and indications

RISK REDUCTION STRATEGIES & MANAGEMENT

1. Bacterial Infection
 - a) Signs & symptoms
 - b) Pharmaceutical management protocol
 - c) Preventive strategies
 - d) Best practical aseptic PRP preparation & injection techniques
 - e) Common pitfall & overlooked areas
2. Bruise
3. Swelling
4. Vasovagal response
 - a) Review of proper management for acute vasovagal response
5. Cutaneous viral activation
 - a) Review of antiviral drugs & dosage

PATIENT SELECTION & INFORMED CONSENT

1. Discuss effective communication methods to identify patient expectations, predicting clinical outcomes, and to communicate the risks and benefits for patients considering cosmetic PRP injections
2. Discuss necessary clinical forms including informed consent for cosmetic PRP injections
3. Discuss recommended photographic equipment and techniques to obtain clinically meaning and consistent pre- & post-injection photographs
4. Discuss pre- & post injection care routines
5. Discuss required level of staff training to answer cosmetic PRP injections related questions and common post-injection inquiries including onset and duration of therapeutic benefit, bruise, and swelling in a professional manner
6. Discussion of procedural charting requirements
7. Discussion of contraindication, comorbidities, and proper patient selection including psychiatric conditions (e.g. body dysmorphic disorder, injection anxiety, etc.)

RHYTIDOLOGY

1. Discuss Glogau scale of photoaging
2. Discuss dynamic & static wrinkles and introduction to various therapeutic approach to address different levels of aging and different types of wrinkles
3. Review of normal and photo-aged skin physiology and anatomy

PHLEBOLOGY FOR PRP

1. Optimal blood flow rate during blood collection
2. Optimal veins for blood collection
 - a) Antecubital
 - b) External jugular
3. Optimal blood collection needle gauge
4. Sodium citrate as reversible anticoagulant
 - a) Optimal blood-to-anticoagulant ratio

PRP INJECTION TECHNIQUES

1. Review standard aseptic injection techniques and injectable handling including proper skin preparation and field preparation
2. Needle gauge selection
3. Position of bevel
4. Intradermal, subdermal, subcutaneous
5. Linear threading & serial puncture
6. Anterograde & retrograde injections
7. Cross-hatching & fan technique
8. Layering injection technique
9. Dermal-cutting injection technique
10. Cannula injection techniques
11. Automated gun injection

CLINICAL CASE REVIEW

Present various clinical cases and discuss required PRP volume, injection depth, injection techniques, and clinical pearls for each individual case.

LIVE PRP INJECTION DEMONSTRATION & HANDS-ON TRAINING

1. Provide demonstration on live patient by instructor: consultations, treatment planning, blood extraction from antecubital and external jugular veins, PRP separation/activation, cosmetic PRP skin injection and post procedural care
2. Provide hands-on training by trainee on live models to achieve technical competency in cosmetic PRP injections including consultations, treatment planning, blood extraction from antecubital and external jugular veins, PRP separation/activation, cosmetic PRP skin injection and post procedural care
3. Provide mock scenarios of managing cosmetic PRP injection related complications
4. Provide comprehensive feedback on trainee's injection techniques & address any weakness trainee may have

WRITTEN EXAM

The written exam consists of 30 multiple choice questions, 10 short answer questions, and 10 clinical cases. Digital media is used to present 10 clinical cases. For the 10 clinical cases, trainee is required to select injection site, injection depth, and injection technique, estimation of required PRP volume and rationale for his/her selections. For the 10 clinical cases, trainee automatically fails the exam if the trainee's answers include fatal misdiagnosis, omission, and/or errors which may jeopardize the patient's safety. A grade of 70% or higher in the written exam section is required to pass the course.

PRACTICAL EXAM

On a live patient, trainee must demonstrate proficiency in the following areas to pass the course. A grade of 70% or higher in the written exam section is required to pass the course.

1. Demonstrate comprehensive proficiency in providing anesthesia in the form of peripheral blocks, topical anesthesia, and local anesthesia, and product infused anesthesia. Demonstrate the risks and benefits of each form of anesthesia and suggest the most appropriate form of anesthesia for the patient.
2. Demonstrate competency of accessing vein from both antecubital and external jugular veins.
3. Provide initial consultation, screen for risk factors and contradictions, obtain informed consent, and deliver appropriate PRP injection to the patient under close supervision. Injection process is terminated immediately when the instructor finds the progression of injection process less than optimal. Such termination disqualifies trainee from passing the course regardless of the final score.
4. Demonstrate ability to fulfill necessary charting requirement.