



## **Aurix<sup>®</sup> Body of Evidence**

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## AURIX System® Body of Evidence w/ Summaries

### **Background**

The body of evidence presented below were evaluated by the Centers for Medicaid and Medicare Services (CMS) and are cited in the CMS final decision memo mandating payment for Aurix therapy used to treat chronic wounds in patients having a diagnosis of diabetes. The Aurix body of evidence includes:

- A randomized controlled pragmatic all-comers study designed with CMS
- A prospective, randomized, blinded, multi-center, controlled trial on diabetic foot ulcers
- A comparative study evaluating outcomes of chronic wounds treated with advanced modalities during a “run-in” period and the outcomes of the same non-healing wounds after treatment with Aurix.
- A comparative study evaluating outcomes of Wagner Grade 3 and 4 diabetic foot wounds, of which 60% had arteriosclerosis obliterans, when treated initially with standard care followed by Aurix treatment.
- An observational study of 49 patients with 65 wounds of multiple etiologies treated in real world settings.
- An observational study of 20 spinal cord injured patients with 20 wounds.
- An observational study of 200 patients with 285 wounds of multiple etiologies treated in real world settings.

References for these studies and summaries with key points are provided below.

### **Pragmatic, Prospective, Randomized, Multi-Center, Controlled Trial**

**Gude W, Hagan D, Abood F, et al. (2019) Aurix Gel is an effective intervention for chronic diabetic foot ulcers: A pragmatic randomized controlled trial. *Adv Skin Wound Care*, 32(9):416-426. doi: 10.1097/01.ASW.0000577140.19174.9e.**

### **Summary**

This study evaluated the effectiveness of up to 12 weeks treatment with Aurix hematogel as compared to treatment with Usual and Customary Care (***including any advanced modality***) for healing diabetic foot ulcers in the broad population of Medicare beneficiaries. 129 patients participated trial developed with CMS under Medicare’s Coverage with Evidence Development (CED) paradigm. This trial was conducted in 28 real-world outpatient wound care sites using an inclusive design that included participants with multiple health risks, comorbidities (eg, peripheral arterial disease, smoking), and any wound severity (Wagner 1-4). Key findings include:

- Kaplan-Meier analysis showed a significant (log-rank P = .0476) time-to-heal advantage, with 48.5% of wounds healing with Aurix hematogel compared with 30.2% with usual and customary care.
- A higher percentage of healing was observed for Aurix across all wound severities (Wagner grade 1-4).
- Subgroup analysis revealed a significant healing advantage for Aurix when treating wounds accompanied by peripheral arterial disease and a demonstrated advantage for smokers

## **Prospective, Randomized, Double-Blinded, Multi-Center, Controlled Trial**

**Driver, V. R., Hanft, J., Fylling, C. P., Beriou, J. M., & Autologel Diabetic Foot Ulcer Study Group. (2006). A prospective, randomized, controlled trial of autologous platelet-rich plasma gel for the treatment of diabetic foot ulcers. *Ostomy Wound Management* 52(6), 68-87.**

### **Summary**

This prospective, randomized, controlled, blinded, multicenter clinical study evaluated the safety and efficacy of Aurix Gel for the treatment of nonhealing diabetic foot ulcers. Forty (40) Patients were randomized into two groups, standard of care with Aurix gel compared to standard of care with the control dressing (saline gel). Wounds were evaluated biweekly for 12 weeks or until healing. Healing was confirmed 1 week following closure and monitored for another 11 weeks. Key findings include:

- In the most common sized wounds,  $\leq 7\text{cm}^2$  in area, significantly more Aurix (13 out of 16, 81.3%) than control dressing (eight out of 19, 42.1%) treated wounds healed ( $P = 0.036$ , Fisher's exact test).
- Kaplan-Meier time-to-healing was significantly more favorable in the Aurix group (log-rank,  $P = 0.0177$ ).
- The average time to complete healing was 6 weeks.

## **Comparison Studies: "Run In" Treatment vs Aurix Treatment**

**Carter, M., Fylling, C., Li, W., De Leon, J., Driver, V., Serena, T., et al. (2011). A statistical analysis of a wound outcomes registry using run-in data: clinical impact of platelet rich plasma gel on healing trajectory. *Int Wound J.* 2011; 8:638–650.**

### **Summary**

This study utilized the patient's own non-healing wounds as a control. During a mean run-in period of 52.4 weeks, non-healing wounds were treated with any modality that providers and patients identified as warranted within the continuum of care. Following the run-in period, Aurix treatment was provided. Identified within a treatment registry of 285 chronic wounds, 46 wound contributing 7 different etiologies had run-in and post Aurix treatment data. Key finding include:

- Mean wound area and depth either remained the same or increased during the run-in period
- Within 1-2 weeks after treatment with Aurix, the wound area and depth reduced significantly.

**Sakata J, Sasaki S, Handa K, Uchino T, Sasaki T, Higashita R, Tsuno N, Hiyoshi T, Imakado S, Morimoto S, Rinoie C, Saito N. (2012) A retrospective, longitudinal study to evaluate healing lower extremity wounds in patients with diabetes mellitus and ischemia using standard protocols of care and platelet-rich plasma gel in a Japanese wound care program. *Ostomy Wound Management* 58(4):36–49.**

### **Summary**

This retrospective, longitudinal study was conducted to evaluate the outcomes of standard care regimens compared to the use of a topical Aurix Gel for treating Wagner Grade 3 and 4 diabetic wounds of which 60% also had arteriosclerosis obliterans. Wound outcomes from 39 patients with 40 chronic, nonhealing, lower extremity wounds were evaluated at the first presentation at the WCC (T1), after using standard topical treatments (T2), and subsequently after Aurix Gel (T3). Key findings include:

- During the first treatment period (T1 to T2) of 75.3 days, which included revascularization and/or debridement along with standard of care, none of the wounds healed and the average wound area, depth, and volume increased.
- Following topical Aurix gel treatment, 83% of wounds healed within 145.2 days (T2 to T3) ( $P = 0.00002$ ). Only one patient required an LEA.

## **Observational Studies**

**Frykberg, R. G., Driver, V. R., Carman, D., Lucero, B., Borris-Hale, C., Fylling, C. P., et al. (2010). Chronic wounds treated with a physiologically relevant concentration of platelet-rich plasma gel: a prospective case series. *Ostomy Wound Management*, 56(6), 36-44.**

### **Summary**

This prospective case series evaluated the impact of Aurix treatment on the initial wound healing trajectories of chronic, nonhealing wounds of various etiologies and in different care settings. Forty-nine patients (average age: 60.6 years, SD 14.7) with 65 nonhealing wounds with mean duration of 47.8 weeks were evaluated. Patients received Aurix treatment at any of eight long-term acute care (LTAC) hospitals and three outpatient foot or wound clinics. Key findings include:

- The majority of patients had low albumin, hematocrit, and/or hemoglobin levels.
- Mean wound area and volume were 19 cm<sup>2</sup> (SD 29.4) and 36.2 cm<sup>3</sup> (SD 77.7), respectively.
- Following a mean of 2.8 weeks with 3.2 Aurix applications, an average 51% reduction in wound volumes, 39.5% in wound area, 77.8% in undermining and 45% reduction in sinus tracts and tunneling were observed.
- For all wound etiologies, 97% of wounds improved.

**Rappl LM. (2011) Effect of platelet rich plasma gel in a physiologically relevant platelet concentration on wounds in persons with spinal cord injury. *Intl Wound Journal*. 8(2), 187-195.**

### **Summary**

The objective of the study was to investigate the use of Aurix Gel to move chronic wounds towards healing in persons with spinal cord injury (SCI). In this 20-person case series outcome measures included changes in wound area, volume, undermining and sinus tracts/tunnels (ST/Ts). Changes were assessed as compared to baseline wound measurements. Findings include:

- In a mean of 4.0 Aurix treatments over 3.4 weeks, the wounds closed on average 47.9% in area and 56.0% in volume.
- Rapid healing progress was observed in patients with below normal average hemoglobin and hematocrit levels.
- Aurix treatment improved the healing trajectory of nonhealing wounds (mean duration of 79.4 weeks) in the majority (>90%) of SCI patients evaluated.

**de Leon J, Driver VR, Fylling CP, Carter MJ, Anderson C, Wilson J, et al. (2011) The clinical relevance of treating chronic wounds with an enhanced near-physiological concentration of platelet rich plasma (PRP) gel. *Advances in Skin and Wound Care*, 24(8), 357-368.**

### **Summary**

This large, observational case series used a multicenter (39) registry database (all wounds included), to evaluate the effectiveness of short-term use of Aurix gel for treating different chronic wound etiologies. Reduction of wound area and volume as well as of undermining and sinus tracts/tunnelling in response to Aurix treatment were evaluated. Aurix gel was used to treat 285 chronic wounds (patient n = 200) including diabetic, pressure, or venous ulcer; dehisced, surgical, or traumatic wound; and wounds of other etiologies. Key points include:

- 86.3% of the wounds showed a 47.5% area reduction after topical application of Aurix.
- 90.5% of wounds treated with Aurix showed a 63.6% reduction in wound volume
- 89.4% of wounds with undermining and 85.7% of wounds with sinus tracts/tunneling showed 71.9% and 49.3% reductions in linear total measurements respectively.
- A positive response occurred in 96.5% of wounds within 2.2 weeks with 2.8 Aurix treatments.