



# 제 18회 담낭 용종 연구 보고

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# 실험 세팅

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## ➤ 데이터 구성

- 177명의 환자 데이터 (서울대 전체 데이터)
- Neoplastic : 100명, Non-neoplastic : 77명

## ➤ Train & Test Set

- 2,888장의 데이터셋
- Train Set : 141명(2256장)
- Test Set : 36명(632장)

## ➤ Input Image

- Outline, Inline, Polyp, 담낭벽+Polyp 이미지

## ➤ 모델 구성

- U-Net 모델을 이용한 Segmentation
- Hard-Net 모델을 이용한 Segmentation
- Attention Mechanism 모델을 이용한 Segmentation

# Segmentation Model Performance Table

Table . Metrics with 95% confidence interval of four Images (▼/△ indicates that the corresponding method is significantly worse/better than U-Net model based on paired t-test at 5% significance level).

| Segmentation Model  | Target      | Validation Dice | 95% CI |       | p-value   |     |
|---------------------|-------------|-----------------|--------|-------|-----------|-----|
|                     |             |                 | Lower  | Upper |           |     |
| U-Net               | Outline     | 0.888           | 0.873  | 0.903 |           |     |
|                     | Inline      | 0.798           | 0.777  | 0.819 |           |     |
|                     | Polyp       | 0.675           | 0.655  | 0.697 |           |     |
|                     | 담낭벽 + Polyp | 0.731           | 0.712  | 0.752 |           |     |
| Hard-Net            | Outline     | 0.439           | 0.417  | 0.453 | 4.892E-06 | **▼ |
|                     | Inline      | 0.317           | 0.298  | 0.335 | 7.564E-06 | **▼ |
|                     | Polyp       | 0.186           | 0.174  | 0.201 | 4.531E-06 | **▼ |
|                     | 담낭벽 + Polyp | 0.246           | 0.227  | 0.266 | 7.269E-06 | **▼ |
| Attention Mechanism | Outline     | 0.841           | 0.819  | 0.864 | 0.041     |     |
|                     | Inline      | 0.773           | 0.751  | 0.793 | 0.208     |     |
|                     | Polyp       | 0.642           | 0.621  | 0.667 | 0.146     |     |
|                     | 담낭벽 + Polyp | 0.674           | 0.651  | 0.697 | 0.031     |     |

CI, confidence interval; NN, neural network. \*: p-value < 0.01, \*\*: p-value < 0.001