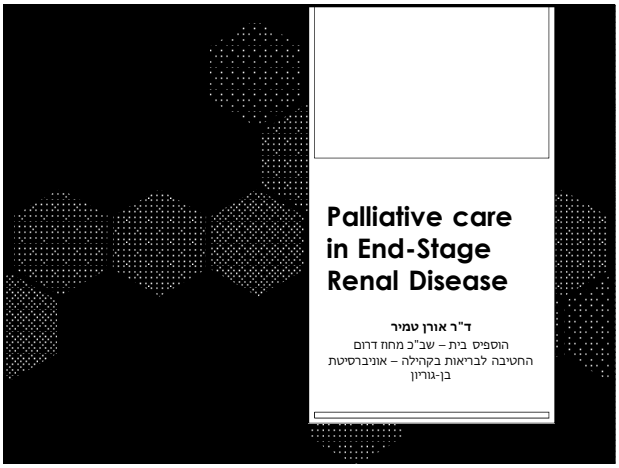
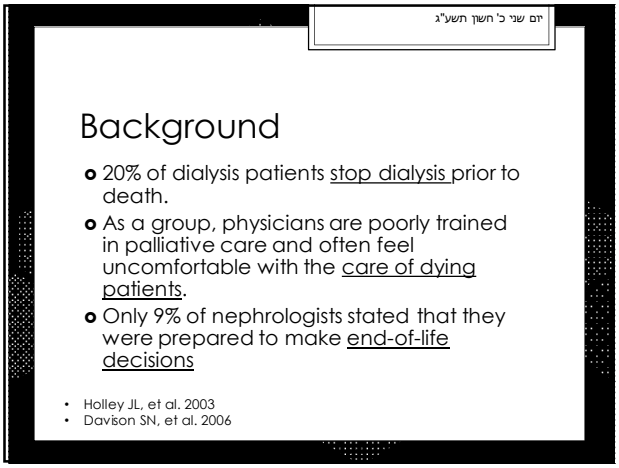
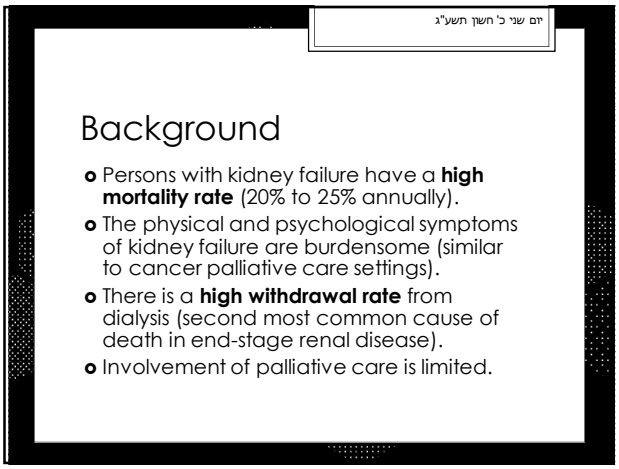

Palliative care in End-Stage Renal Disease
ד"ר אורן טמיר
הוספיס בית – שב"כ מחוז דרום
החטיבה לבריאות בקהילה – אוניברסיטת בן-גוריון


יום שני כ' חשון תשע"ג
Background
20% of dialysis patients stop dialysis prior to death.
As a group, physicians are poorly trained in palliative care and often feel uncomfortable with the care of dying patients.
Only 9% of nephrologists stated that they were prepared to make end-of-life decisions
Holley JL, et al. 2003
Davison SN, et al. 2006


יום שני כ' חשון תשע"ג
Background
Persons with kidney failure have a high mortality rate (20% to 25% annually).
The physical and psychological symptoms of kidney failure are burdensome (similar to cancer palliative care settings).
There is a high withdrawal rate from dialysis (second most common cause of death in end-stage renal disease).
Involvement of palliative care is limited.

אפידמיולוגיה של מחלות כליה בארץ

- שעור חולי כליה כרוניים-48 חולים לכל 100,000 איש ב-1998, 65 ב-2005
- בישראל כ- 700 אלף חולי כליה, המהווים כ- 10% מכלל האוכלוסייה.
- מספר חולי הדיאליזה בישראל עלה מ-2,913 חולים בשנת 1998 לכ-5,000 חולים בשנת 2006.
- בשנים 2004 ו-2005 נפטרו 860 חולים, ובשנת 2006 נפטרו 910 חולי דיאליזה.

Unadjusted Survival Probabilities (%) for Incident ESRD Patients[*]

AGE (YR)	**Time on Dialysis**			
	1 yr	**2 yr**	**3 yr**	**5 yr**
20-29	94.0	90.6	85.8	81.8
30-39	91.8	85.4	79.9	70.2
40-49	89.0	81.0	73.2	60.0
50-59	85.9	74.6	64.6	46.7
60-64	81.1	68.0	55.7	35.6
65-69	76.9	62.6	48.5	27.3
70-79	69.6	51.9	37.3	18.4
+80	58.9	37.8	23.9	8.4
All	**78.2**	**65.2**	**53.7**	**37.7**

-Unadjusted Survival Probabilities (%) for Incident ESRD Patients[1]

- Providing palliative care begins at the time of diagnosis. With progression of kidney disease, palliative care assumes increasing importance with time.

PRINCIPLES OF PALLIATIVE CARE

- Palliative care refers to the **comprehensive management** of the physical, psychological, social, spiritual, and existential needs of patients and families in the setting of serious illness.
- The goal of palliative care is to achieve the best possible **quality of life** by relieving suffering, controlling symptoms, and restoring functional capacity, while maintaining sensitivity to personal, cultural, and spiritual beliefs and practices.
- Throughout the course of a serious illness, **palliative care assumes an increasing priority over disease-directed care** and eventually focuses upon the dying process.

- Task force on Palliative care. Last acts: Precepts of palliative care, Stewart Communications, Ltd., Chicago, 1997.
- Germain MJ, et al. 2001

PRINCIPLES OF PALLIATIVE CARE

- There is no uniform policy about continuing dialysis for hospice patients.
- continuing dialysis while a patient is receiving hospice care will need to be addressed on an **individual basis**.
- Patients who withdraw from dialysis should be eligible for hospice in nearly all cases. (under-utilized).

Important aspects of palliative care in the chronic kidney disease patient

- Assessment of quality of life
- Advance directives
- Symptom control
- Bereavement care for family and community

Barriers to Palliative Care in Non-Cancer Diseases:

- Physicians' inability to provide accurate prognostic information toward the end of life.
- Insufficient education of patients and families about the uncertainty in prognosis.

Barriers to Palliative Care in Non-Cancer Diseases :

- Wanting to focus on staying alive.
- Unwillingness to discuss being sick.
- Lack of knowledge about the type of care and who the treating physician will be in the event of an acute illness.

Intradialytic symptoms related to dialysis

- Patients with high co-morbidity have more of them.
- Symptoms include symptomatic **hypotension**, **cramps**, **nausea**, **vomiting**, **pruritus**, and **pain** from arteriovenous fistulas.
- Approximately 40% of dialysis treatments are associated with symptoms.

Intradialytic symptoms related to dialysis

- More than **80%** of dialysis patients experience them at least **once a week**.
- Often are related to a lack of appropriate vasoconstriction as fluid is removed.

The most frequently reported symptoms

- Tiredness (92%)
- Decreased well-being (92%)
- Anorexia (83%)
- Pruritus (73%)
- The most severe :pain, pruritus, and fatigue
- Insomnia is also distressing and is reported by 50% to 90%

Symptom control after dialysis discontinuation

- Mean survival from the last dialysis treatment to death in a patient who stops dialysis is **six to eight days** (2-100 days).
- Most patients who withdraw from dialysis die in the hospital; they are rarely referred for hospice care.

- Cohen LM, et al. 2000
- Neu S, et al. 1986
- Fissell RB, et al. 2005
- Soltys FG, et al. 1998

Symptom control after dialysis discontinuation

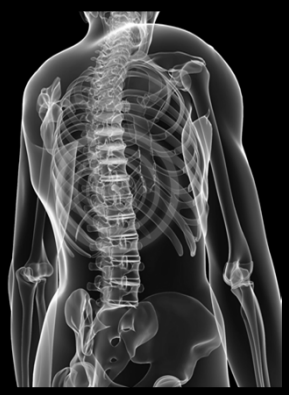
- Uremic deaths are generally painless somnolent.
- 42 percent reported to be in pain by their families/loved ones.
- 75 percent of patients were in pain during the last week of life.

- Cohen LM, et al. 2000
- Cohen LM, et al. 2005

Symptom control after dialysis discontinuation

- Comorbid conditions such as PVD, CAD, and neuropathy were the causes of the perceived pain.
- Other reported symptoms include weakness, fatigue, agitation, depression, myoclonus or muscle twitching, dyspnea or agonal breathing, fever, diarrhea, dysphagia, and nausea.
- patient comfort such as lip balm, mouth swabs, positioning, back rubs, fans, and the elimination of blood draws and dietary restrictions.

- Cohen LM, et al. 2000
- Cohen LM, et al. 2005



Pain

Renal Osteodystrophy

- Patients with osteitis fibrosa present with **bone and joint pain** on exertion in skeletal sites subject to biomechanical stress.
- Pain at rest, localized pain, pathological fractures, or bone deformities suggest other problems such as osteomalacia, amyloid, adynamic bone disease, or concomitant osteoporosis.

Renal Osteodystrophy

- Osteitis fibrosa can be associated with red-eye syndrome due to conjunctival deposition of calcium.
- Soft tissue calcium deposition, proximal myopathy, ruptured tendons, pseudogout (calcium pyrophosphate dehydrate crystals), pseudoclubbing (from erosive loss of the ends of bones), and CUA may all be seen with osteitis fibrosa.
- Osteomalacia presents with bone pain (which can be localized) and fractures.

Renal Osteodystrophy

- Adynamic bone disease are prone to bone and joint pain both at rest and with exertion, fractures, skeletal deformities, and hypercalcemia.
- The incidence of **hip fracture** is 14 times greater for men with ESRD than in the general population, and 17 times greater for women.

Dialysis-Related Amyloidosis

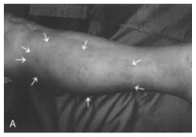
- Tissue amyloid deposition occurs earlier than any clinical or radiographic manifestations.
- Major clinical manifestations :carpal tunnel syndrome, bone cysts, spondyloarthropathy, pathologic fractures, and swollen painful joints, especially scapulohumeral periarthritis.
- Amyloid deposition can also occur in subcutaneous tissues and skin, and less frequently in rectal mucosa, liver, spleen, and blood vessels

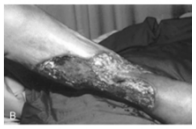
Calcific Uremic Arteriolopathy -Calciphylaxis-

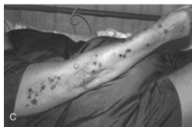
- Ischemic necrosis in the dermis, in subcutaneous fat, and sometimes in muscle.
- Painful violaceous skin mottling (livedo reticularis) can progress to painful, well-demarcated nonulcerating plaques

Calcific Uremic Arteriolopathy

- Multiple **tender nodules** represent subcutaneous calcium deposits.
- Mortality is high if lesions become ulcerated.
- **Sepsis** and **ischemic** events are the two main causes of death.
- 60% to 89% of CUA patients die from sepsis.
- **Proximal lesions** over the abdomen, thigh, or buttock have a poorer prognosis
- Distal lesions may mimic atherosclerotic peripheral vascular disease.







Pain

- The most frequent symptom in the dying patient with ESRD
- Pain remains undertreated in many hemodialysis patients.
- This is particularly the case when patients die in an institution versus the home

- Cohen LM, et al. 2000
- Cohen LM, et al. 2005
- Davison SN. 2003
- Davison SN. 2007
- Bailie GR, et al. 2004

Analgesia in ESRD

- because of impaired renal excretion, many analgesics or their metabolites accumulate, resulting in significant adverse effects.
- Both **codeine** and **tramadol** can accumulate in patients with renal failure, extending their effects.

Analgesia in ESRD

- **Meperidine** should not be used in those with chronic kidney dysfunction because its metabolite, ***normeperidine***, accumulates, leading to central nervous system excitability and seizures.

Analgesia in ESRD

- prolonged use of **morphine** in patients with chronic kidney disease may lead to the accumulation of ***morphine-3-glucuronide*** and ***morphine-6-glucuronide***, which may contribute to the development of myoclonic jerks.
- The accumulation of ***morphine-6-glucuronide*** may also lead to prolonged narcosis in those with kidney disease.
- For short term use (days), **morphine** is an excellent analgesic for dying patients with end stage renal disease and is also useful in the treatment of dyspnea.

- Neely KJ, Roxe DM. 2000
- Cohen MH, et al. 1991

Analgesia in ESRD

In general:

- **Morphine**, **Meperidine** and **Codeine** should be avoided in dialysis patients.
- **Hydromorphone** and **Oxycodone** should be used with caution.
- **Fentanyl** and **Methadone** appear to be relatively safe to use.

Myoclonus, muscle twitching, and seizures

- Drug-induced or uremic-associated muscle twitching or myoclonus may be treated with benzodiazepines, such as clonazepam.
- Less than 10 % of patients who withdraw from dialysis develop seizures. Thus, the routine, prophylactic use of anticonvulsants is not recommended.

Hypervolemia

- Symptoms of volume overload are uncommon in patients who withdraw from dialysis.
- When it occurs, isolated ultrafiltration without dialysis is an effective intervention.

- Cohen LM, et al. 2000
- Neu S, et al. 1986