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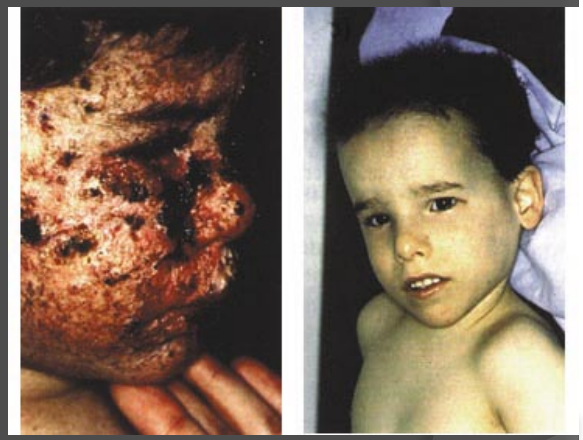
XERODERMA PIGMENTOSUM

General Information

- Xeroderma pigmentosum (Group A), or XP-A, is an **autosomal recessive** genetic disorder in which the DNA cannot repair the damage done by **UV** rays.
- XP is characterized by sensitivity to the sun, early aging of the skin and neoplasia
- XP is caused by a problem in the NER



Diagnosis based on symptoms

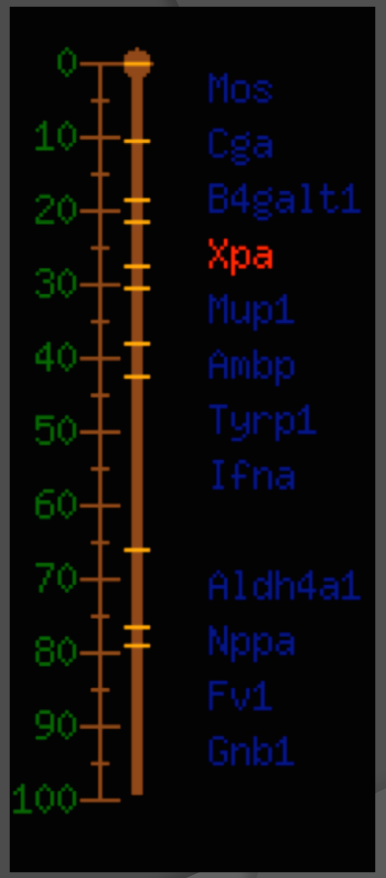
- · **Skin**
  - In the first year - severe sunburn with blistering
  - In the second year -marked freckling of the face
  - Generally -xerosis (dry skin) and poikiloderma (patches of pigmentation)
- · **Eye**
  - photophobia
  - The lids develop increased pigmentation and loss of lashes.
- · ***Nervous system***
  - *30%* of individuals have characteristic neurologic problems that gradually worsen.

Traditional Treatment

- Small, premalignant skin lesions
  - Topical 5 –fluorouracil or cryotherapy
- Large, malignant lesions
  - Dermabrasion
- Prevention
  - Avoid sun and UV exposure

Gene in question

- XPA is located on chromosome 9q22.3
- Most mutations resulted from frameshifts within the DNA-binding region
- XPA gene contains 6 exons.
  - Exons 2 through 6 are essential for the DNA repair function.
  - Traced back to glutamic acid cluster, located in exon 2.



Genomic Testing/Trials

- **Sequence analysis.**
- **Targeted mutation analysis.**
  - > 90% of Japanese individuals with XPA have the same single-base substitution mutation
  - With this knowledge, molecular genetic testing has been developed for quick confirmation of XPA diagnosis
- Trial Treatments have been successful
  - ATEIA AG
  - Anti XPA monoclonal antibodies

References

- OMIN
- GeneReviews
- Department of Dermatology, Faculty of Medicine, Kyoto University, Japan.
- Clinicaltrials.com

Questions?