globulin (Ig)-containing cells that infiltrate various stages of cervical neoplasia from no lesion to invasive cancer. Method. By three-color immunofluorescent microscopy, the number and isotype of stromal plasma cells were determined for 91 specimens of stromal plasma cells. The Ig-positive cell counts were markedly increased under the pretreatment risk of high-risk patients.

**Globulin (Ig)-containing cells infiltrate various stages of cervical neoplasia from no lesion to invasive cancer.**

**Method.** By three-color immunofluorescent microscopy, the number and isotype of stromal plasma cells were determined for 91 specimens of stromal plasma cells. The Ig-positive cell counts were markedly increased under the pretreatment risk of high-risk patients.

**Proliferating cell nuclear antigen (PCNA) immunoreactivity of tumor cells in curettage specimens containing endometrioid adenocarcinoma and obtained immediately before definitive surgical staging.** This PCNA index was compared with the one subsequently derived from surgical specimens and assessed as a function of histologic grade, depth of myometrial invasion, neoplastic nodal involvement, cervical spread, and progression-free survival in order to determine a new prognostic parameter valuable at the time of diagnosis. Materials and methods. A population of 79 patients with locally advanced (stage-I and -II) endometrioid carcinoma, who underwent both the preliminary diagnostic curettage and the subsequent definitive surgical management, selected from January 1986 to June 1993 at the Department of Gynecology and Obstetrics, Ancona University, was retrospectively recruited from our series of 99 endometrioid carcinomas. The archival paraffin blocks from the curettage and uterine specimens were identified and assessed for histologic re-examination and PCNA immunostaining (PC10 monoclonal antibody; Dako, Denmark). Results. After a median follow-up of 47 months, recurrences were detected in seven cases, and the Kaplan-Meier disease-free survival curve estimated for the entire study group was 91%. The median PCNA index of the curettage specimens presented a good overlap with the PCNA immunostaining in corresponding uterine samples with a correlation coefficient of 0.4 (P = 0.02). A PCNA index of 30% in a curettage specimen was predictive of deep myometrial invasion; of 35 patients with a PCNA index of 30%, 29 (83%) had a 50% myometrial invasion. No significant relationship was observed with neoplastic cervical spread and histologic differentiation. By Cox hazard analysis, the PCNA index evaluated on curettage specimens was significantly related to disease-free survival, with significant disease-free survival advantages for patients with PCNA <30% (P < 0.001). Conclusions. Our findings suggest that PCNA immunostaining has proved to be considerably promising for risk assessment in locally advanced endometrial carcinoma. The PCNA index is an objective and reproducible parameter accurately valuable also before starting the treatment; in the presence of a high PCNA index, the patient should be referred to a gynecologic oncologist for appropriate management.

**Proliferating cell nuclear antigen in endometrial carcinoma: pretreatment identification of high-risk patients.**

Gazretti G.G.; Ciavattini A.; Goteri G.; De Nictolis M.; Romanini C.

**Proliferating cell nuclear antigen in endometrial carcinoma: pretreatment identification of high-risk patients.**

Gazretti G.G.; Ciavattini A.; Goteri G.; De Nictolis M.; Romanini C.

**AM J OBSTET GYNECOL 1996 174/3 (958–965)**

Objective. Our purpose was to evaluate serum antimüllerian hormone as a marker for granulosa cell tumors. Study design. Serum antimüllerian hormone concentrations were determined in 16 patients with an adult-type granulosa cell tumor; in female patients with ovarian adenocarcinoma, benign ovarian cysts or extraovarian cancers; and in normal premenopausal and postmenopausal women. Serum antimüllerian hormone, α-inhibin and estradiol levels were compared in 10 patients with a granulosa cell tumor during 6–47 months of follow-up. Results. Serum antimüllerian hormone was undetectable in normal postmenopausal women and was < 5 g/l in premenopausal women. Normal serum levels were found in patients with ovarian cancers or cysts, or with extraovarian cancers. Levels were between 6.8 and 117.9 g/l in eight of nine patients with a progressive granulosa cell tumor. In the remaining case, antimüllerian hormone, α-inhibin and estradiol concentrations were normal. Serum antimüllerian hormone and α-inhibin levels became elevated at least 11 months before the recurrence was clinically detectable. During clinical remission serum antimüllerian hormone, α-inhibin and estradiol were normal in most cases. Conclusions. Serum antimüllerian hormone is a sensitive, specific, reliable marker of adult-type granulosa cell tumors and is useful to evaluate the efficacy of treatment and to detect recurrences early.

**Antimüllerian hormone as a serum marker of granulosa cell tumors of the ovary: comparative study with serum α-inhibin and estradiol**

Rey R.A.; Lhomme C.; Marcilliac I.; Lahlou N.; Duvillard P.; Jesse N.; Bidart J.M.

**ITA GYNECOL ONCOL 1996 61/4 (16–21)**

- **Objective.** The aim of our study was to retrospectively examine the proliferating cell nuclear antigen (PCNA) immunoreactivity of tumor cells in curettage specimens containing endometrioid adenocarcinoma and obtained immediately before definitive surgical staging. This PCNA index was compared with the one subsequently derived from surgical specimens and assessed as a function of histologic grade, depth of myometrial invasion, neoplastic nodal involvement, cervical spread, and progression-free survival in order to determine a new prognostic parameter valuable at the time of diagnosis.

**Materials and methods.** A population of 79 patients with locally advanced (stage-I and -II) endometrioid carcinoma, who underwent both the preliminary diagnostic curettage and the subsequent definitive surgical management, selected from January 1986 to June 1993 at the Department of Gynecology and Obstetrics, Ancona University, was retrospectively recruited from our series of 99 endometrioid carcinomas. The archival paraffin blocks from the curettage and uterine specimens were identified and assessed for histologic re-examination and PCNA immunostaining (PC10 monoclonal antibody; Dako, Denmark). Results. After a median follow-up of 47 months, recurrences were detected in seven cases, and the Kaplan-Meier disease-free survival curve estimated for the entire study group was 91%. The median PCNA index of the curettage specimens presented a good overlap with the PCNA immunostaining in corresponding uterine samples with a correlation coefficient of 0.4 (P = 0.02). A PCNA index of 30% in a curettage specimen was predictive of deep myometrial invasion; of 35 patients with a PCNA index of 30%, 29 (83%) had a 50% myometrial invasion. No significant relationship was observed with neoplastic cervical spread and histologic differentiation. By Cox hazard analysis, the PCNA index evaluated on curettage specimens was significantly related to disease-free survival, with significant disease-free survival advantages for patients with PCNA <30% (P < 0.001). Conclusions. Our findings suggest that PCNA immunostaining has proved to be considerably promising for risk assessment in locally advanced endometrial carcinoma. The PCNA index is an objective and reproducible parameter accurately valuable also before starting the treatment; in the presence of a high PCNA index, the patient should be referred to a gynecologic oncologist for appropriate management.

- **Central nervous system (CNS) involvement by endometrial carcinoma is uncommon.** Among 1069 patients registered for endometrial carcinoma at our institution between 1982 and 1994, 10 (0.9%) developed brain metastases. Median age at the time of CNS metastasis diagnosis was 59 years. Median interval between diagnosis of endometrial cancer and documentation of brain involvement was 26 months. Clinical manifestation of...
were contrast-enhanced on computed tomography scans and were located in the cerebrum in seven cases, in the cerebellum in one case and in both in two cases. The CNS was the only site of detectable disease in six patients with recurrent disease. Nine patients died and one is alive with disease 3 months after surgical resection of a single cerebral deposit. Median survival from diagnosis of brain metastases for the entire series was 1 month (range 1–83 months). Six patients receiving only steroids died within 1 month of diagnosis. One patient received radiotherapy (survival, 3 months) and two underwent surgical resection of solitary metastasis followed by radiotherapy (survival, 28 and 83 months). Prognosis of patients with CNS metastases from endometrial carcinoma appears poor; however, in a selected group of patients early diagnosis followed by multimodal treatment may result in a palliation of the disease.

FERTILITY, STERILITY

Contraceptive efficacy of testosterone-induced azoospermia and oligozoospermia in normal men
Griffin P.D.; Aribarg A.; Gui-yuan Z.; Jian C.; Guo-zhu L.; Anderson R.A.; Swerdloff R.S.; Wu F.C.W.; Baker H.W.G.; Xing-hai W.; Sourif J.C.; Paulsen C.A.; Ng S.C.; Gottlieb C.; Handelsman D.J.; Conway A.J.; Resch B.; Szollosi J.; Farley T.M.M.; et al.

CHE FERTIL STERIL 1996 65/4 (821–829)

Objective. To determine contraceptive efficacy of hormonally induced sperm suppression to severe oligozoospermia or azoospermia. Design. Prospective, non-comparative contraceptive efficacy study. Setting. Multicenter study in 15 centers in nine countries. Participants. Three hundred ninety-nine normal, healthy, fertile men requesting a male contraceptive method. Intervention. Weekly intramuscular injection of 200 mg T enanthate. Main outcome measure. Incidence of pregnancies and efficacy when couples relied on T injections alone for contraception. Results. Four pregnancies occurred during 49.5 person-years involving men with oligozoospermia (0.1–3 × 10⁹/ml) and none during 230.4 person-years in azoospermic men: pregnancy rates 8.1 (95% C.I. 2.2–20.7) and 0.0 (95% C.I. 0.0–1.6) per 100 person-years, respectively, or 1.4 (95% C.I. 0.4–3.7) per 100 person-years for oligozoospermia and azoospermia (0–3 × 10⁹/ml) combined. Pregnancy rates were related to sperm concentration. Inadequate suppression of spermatogenesis occurred in eight men and escape from suppression occurred in four. Discontinuations were due to personal reasons (50 men, cumulative annual life-table rate 12.2% [95% C.I. 9.1–16.1%]) and dislike of the injection schedule (21 men, 5.1% [95% C.I. 3.2–7.9%]). Thirty-five men discontinued for medical reasons (9.4% [95% C.I. 6.7–13.2%]), with no serious treatment-related side effects. After stopping injections, sperm output recovered; additionally, fertility was demonstrated in 33 couples. Conclusions. Suppression of spermatogenesis to azoospermia or severe oligozoospermia (3 × 10⁹/ml) induced by weekly T enanthate injections results in sustained, reversible contraception with good efficacy and minimal short-term side effects. New hormonal regimens with more convenient delivery and improved spermatogenic suppression would provide practical male contraception.

Fertilization after intracytoplasmic sperm injection with cryopreserved testicular spermatozoa
Romero J.; Remohi J.; Mingué Y.; Rubio C.; Pellicer A.; Gil-Salom M.

ESP FERTIL STERIL 1996 65/4 (877–879)

Objective. To assess the possibility of cryopreserving testicular tissue-extracted sperm for intracytoplasmic sperm injection (ICSI). Design. A report of two cases. Our study was approved by the ethical committee of the Instituto Valenciano de Infertilidad. Setting. In vitro fertilization program at the Instituto Valenciano de Infertilidad. Patients. Two azoospermic patients with severe spermatogenic failure but with focal spermatogenesis on testicular biopsies. In both cases, a first ICSI attempt with fresh testicular biopsy-extracted sperm was unsuccessful. Interventions. Cryopreservation of testicular spermatozoa in 100-µl pills. Intracytoplasmic sperm injection with thawed testicular spermatozoa. Main outcome measurements. Fertilization rate, cleavage rate, embryo quality, clinical pregnancy. Results. Fertilization rates were 36% and 100% after ICSI with fresh testicular spermatozoa and 63% and 57% after ICSI with cryopreserved testicular sperm. In both cases, cleavage rates and embryo quality were similar when using fresh and cryopreserved testicular spermatozoa. No clinical pregnancies were achieved. Conclusions. High fertilization rates can be obtained after ICSI with frozen-thawed testicular tissue-extracted spermatozoa. Cryopreservation of testicular sperm may avoid repetition of testicular biopsies in azoospermic patients in whom the only source of spermatozoa is the testicle.

Cigarette smoking and semen quality
Vine M.F.; Tse C.-K.J.; Hu P.-C.; Truong K.Y.

USA FERTIL STERIL 1996 65/4 (835–842)

Objective. To determine whether cotinine levels provide stronger evidence for an association between smoking and semen quality than the number of cigarettes smoked per day or years smoked, controlling for potential confounders and effect modifiers. Design. Cross-sectional study. Setting. Male volunteers at the Reproductive Endocrinology-Fertility Laboratory. Participants. Eighty-eight men (ages 18–35 years) provided a semen, urine and blood specimen and completed a self-administered questionnaire concerning smoking and demographic information as well as caffeine and alcohol consumption. Urine, blood and semen cotinine levels were analyzed via RIA. Main outcome measure. Standard clinical semen analysis. Results. Number of cigarettes smoked per day, years smoked and log-transformed cotinine levels were associated negatively with semen quality (density, total count and motility). The association was evident among men age 22 years. For example, the correlation coefficient for the overall association between logged urine cotinine and logged sperm density was −0.23;